



U.S. DEPARTMENT OF
ENERGY

NNSA
National Nuclear Security Administration



CLASS OF 2019–2020

National Nuclear Security Administration Graduate Fellowship Program 2019–2020 Annual Report



Pacific Northwest
NATIONAL LABORATORY

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Cover Photo

Back row, from left: Hannah Gardiner, Bryant Vande Kolk, Annelise Plooster, Amber Morgan, Sydney Shuk, Tyler Lo, Kelsae Adame, Erica Wolf, Jessica Bateman, Daniel Niez, John Ryan Bolt, Blake Campbell, Simón Arias, Jana Starks, Daniel Ellis, Miguel Cortez, Miguel Gonzalez, Cesar Dominquez, Samuel Rising, Sean Heffernan, Alyssa Jones, Celene Chavez, Brandon Thompson, Willa Nathan, Nic Pilley, PNNL NGFP Program Manager Melanie Godinez

Front row, from left: Former NNSA NGFP Federal Program Manager Dr. Dave Rude, NNSA NGFP Operations Manager Dr. Beatriz Cuartas, Caitlin O'Grady, Sidra Zia, Arnold Eng, Edward Hoegg, Gabriel Sandler, Diego Lozano Jimenez, Miguel Richardson, Whitney Baillie-Berring, Anthony Santo Domingo, Rebecca Lewis, Alexander Moe, Taylor Hart-McGonigle, Alexander Godinez-Robinson, Hilda Fontes, Jennifer Abdulla, Timothy Jacomb-Hood, Haylie Lobeck, Wardah Amir, Jared Hatch, Aimee Gonzalez, Jose Ali Espitia, Erica Symonds

Contents

04	A Message from NNSA Leadership	15	Methodology: Retaining the Best & Brightest
06	Executive Summary	16	Results: Delivering High-Quality Mission Support
08	History: The Evolution of NGFP	31	Conclusion: Retaining Next-Generation Quality Talent
12	Operations: Building Next-Generation Leadership	37	Appendix: Fellow Biographies

Acronyms

APSA	American Political Science Association
DoD	Department of Defense
DOE	U.S. Department of Energy
DOS	U.S. Department of State
DTRA	Defense Threat Reduction Agency
IAEA	International Atomic Energy Agency
ICONS	International Conference on Nuclear Security
MSI	Minority-Serving Institution
NGFP	NNSA Graduate Fellowship Program
NNSA	National Nuclear Security Administration
NSDD	Nuclear Smuggling Detection and Deterrence
NSE	Nuclear Security Enterprise
PNNL	Pacific Northwest National Laboratory
RIMS	Resonance Ionization Mass Spectroscopy
ROSES	Research on the Science and Engineering of Signatures
ROTC	Reserve Officer Training Corps
STEM	Science, Technology, Engineering, Mathematics

A Message from NNSA Leadership

Celebrating 25 Successful Years of Building Future Leaders for Nuclear Security

At the U.S. Department of Energy's (DOE's) National Nuclear Security Administration (NNSA), our people are our number one asset, and we are committed to developing a highly professional and diverse workforce to protect our nation. The NNSA Graduate Fellowship Program (NGFP) recruits, hires, and retains the next generation of talented, high-potential professionals who will continue to contribute to the NNSA mission.

The year 2020 marked a monumental occasion in NGFP's history: we celebrated 25 years in operation building the next generation of NNSA and national security leaders. Since its humble beginnings of just three fellows supporting one NNSA mission space, NGFP has become a robust and renowned institutional talent succession pipeline poised to build the leadership continuum across the Nuclear Security Enterprise (NSE).

In this report, you will read about the Class of 2019-2020, 47 fellows hand-picked from 33 universities around the world to serve in program, functional, and field offices across our organization and the Defense Threat Reduction Agency (DTRA). The class is one of the largest and most diverse classes to date, the result of enhanced focus on building relationships with Minority-Serving Institutions (MSIs), affinity groups, and student organizations across the nation.

During their one-year assignments, the fellows learned from NSE-wide experts and made valuable programmatic contributions in some of our key efforts, including the following:

- Providing outstanding worldwide operational support to our partners;
- Evaluating the use of new software and other tools to achieve mission objectives;
- Assisting with assurance visits and vulnerability and threat assessments to advance radiological and nuclear incident response capabilities;
- Coordinating portfolios and engagements with different international partners; and
- Participating in development of the Stockpile Stewardship Management Plan.

Upon completing their fellowships in June 2020, nearly 40% of the fellows joined our NNSA team as federal employees, and the vast majority of the total class remained within the NSE.

The past year also marked a year of change in the face of a global pandemic. Our workforce, like our technology and policies, faced a rapidly changing environment that tested our resilience capabilities to adapt our entire NNSA and NSE missions and functions to safely and seamlessly transition into the virtual world. Our workforce's agility demonstrated during this global crisis is a marker of the caliber of character we seek in our future leaders.



Frank J. Lowery
Associate Administrator for Management and Budget
National Nuclear Security Administration

After two-and-a-half decades of operations, our ever-pressing NGFP mission to build future leaders remains purposefully unwavering. The rapidly changing nature and landscape of our work requires that we keep our top asset—our people—as ready and as cutting-edge as our technical solutions. Our fellows’ commitment to grow and serve as future leaders revitalizes our enterprise with a generation of agile, diversely skilled professionals, and their timing could not be more meaningful. I would like to thank all our program participants for their commitment to serve and to uphold the values of this long-standing program.

25 Years of Fellowship

550+ Alumni

230+ Applicants Per Year

50+ Fellows Per Class

80+ University Partners

40+ NNSA Program, Functional & Field Offices Participating

NNSA Graduate Fellowship Program

Building Future Leaders
Est. 1995

Executive Summary

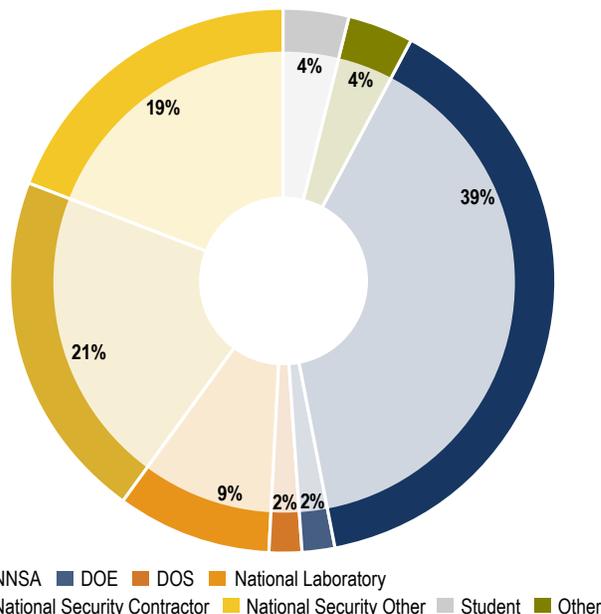
For 25 years, NGFP has been hiring high-performing graduate students to grow as future leaders for DOE's NNSA. This annual report showcases activities for the Class of 2019-2020, from outreach in spring of 2018 through assignments that ended in June 2020. See NGFP By the Numbers on pg. 21 for additional statistics about this year's class.

Key accomplishments include:

- **Recruitment.** NGFP received 238 completed applications and conducted over 380 interviews with 146 candidates. Recruitment reflected an enhanced focus on relationships with MSIs and resulted in one of the largest and most diverse classes in the program's history.
- **Hiring.** NGFP hired 47 master's and doctoral-level students with diverse technical and policy backgrounds from 33 different universities. Detailed biographies of all of the fellows are available at the end of this report.
- **Mission Impact.** The fellows were placed with 11 different program, functional, and field offices across DOE, NNSA, and DTRA where they gained hands-on experience contributing to technical and policy mission needs, including the following:
 - Prepared NNSA senior leaders for their participation in diverse events around the world such as Austria, Japan, the UK, and the Philippines;
 - Conducted technical and end-user risk assessments of dual-use export licenses and foreign engagement proposals for chemical, biological, and nuclear proliferation concerns;
 - Supported initiatives seeking to improve foreign partner capabilities to counter nuclear smuggling;
 - Helped offices prepare for the latest advances in high-performance computing, such as machine learning and quantum computing;
 - Created a comprehensive catalogue of tools and technologies to enable nuclear safeguards activities around the world;
 - Coordinated deliverables and participation in the International Conference on Nuclear Security (ICONS) 2020 in Vienna, Austria;
 - Planned the 2020 Additive Manufacturing Workshop that convened subject matter experts from around the country to encourage cross-governmental collaboration; and

- Participated in the 10th meeting of the U.S.-Japan Nuclear Security Working Group where participants reported on key nuclear security issues.
- **Leadership & Professional Development.** The Class of 2019-2020 was the first to complete the NNSA Aspiring Leadership Certification Program. Fellows also attended a series of program-wide professional development and networking events.
- **Lasting Commitment.** Approximately 39% of the class accepted federal offers with NNSA, and an additional 53% accepted positions with ties to national security, including with NNSA subcontractors, DOE, and national laboratories. The Alumni Spotlight at the end of this report also highlights notable alumni who have gone on to serve the NNSA, national security, and STEM (science, technology, engineering, mathematics) community in meaningful ways.

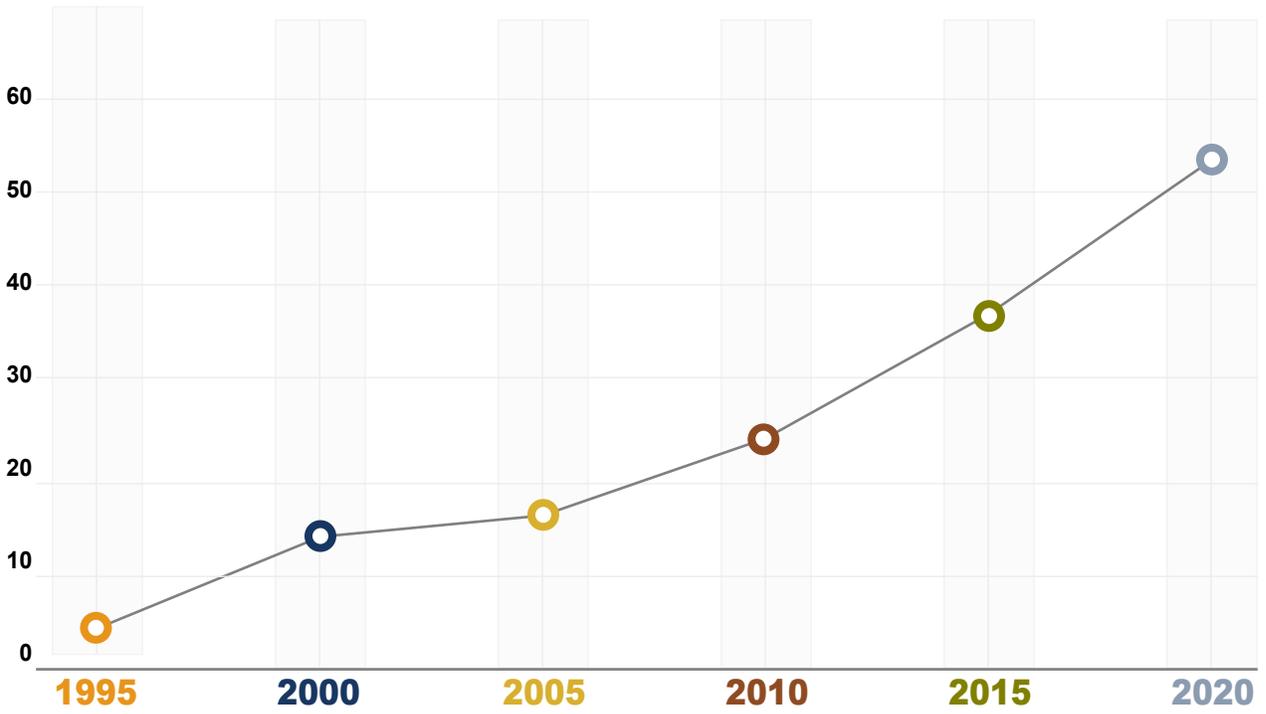
Post-Fellowship Employment



Upon completing the fellowship program, approximately 90% of the Class of 2019-2020 pursued employment with ties to national security

To learn more about NGFP or to view this report online, visit our website at <http://www.pnnl.gov/projects/NGFP>.

Number of Fellows by Class Year



In 25 years of operations, increased demand resulted in an increased fellow supply per year



History: The Institutional Evolution of NGFP

As a centerpiece of its future leadership strategy, NNSA sponsors and funds NGFP. The program is administered by Pacific Northwest National Laboratory (PNNL), a DOE national laboratory specialized in recruiting next-generation talent for national security missions.

As a model program within NNSA, NGFP identifies and develops exceptional future leaders through a best-in-class program management approach designed to:

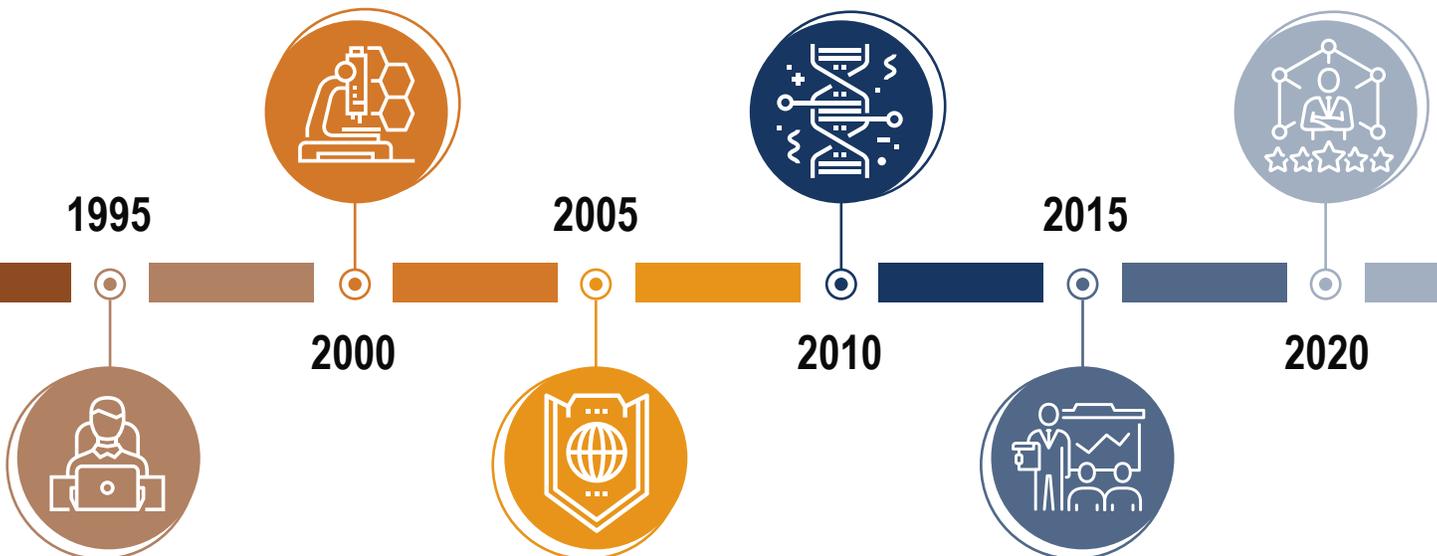
- Recruit exceptional graduate students from top universities,
- Transform and develop students into future leaders to advance NNSA and national security missions, and
- Provide an agile approach to meet dynamic NNSA needs.

In 25 years of operations, the demand for fellows has evolved with the NNSA's increasing need for leading-edge talent in diverse mission spaces. The program has grown from three fellows in 1995 to over 50 in 2020 and expanded across various program and site offices. Having originally served NNSA's Defense Nuclear Nonproliferation mission, the program now spans the

national security enterprise, typically placing fellows within Defense Nuclear Nonproliferation, Defense Programs, Counterterrorism and Counterproliferation, Safety, Infrastructure and Operations, and the site offices, as well as the Department of State (DOS) and DTRA.

Along with general program growth, fellows' opportunities for professional growth and leadership development have evolved as well. The annual training, networking, and development agenda has expanded to include a standard suite of opportunities including the Aspiring Leadership Certification Program provided to all fellows as well as a unique fellow- or office-specific trainings. Each year, fellows find exciting new ways to build their skillsets to best serve their office and individual development goals.

While 2020 was a year of celebration, it was also a year of challenge in the face of a global pandemic. In an unprecedented pivot, the program transitioned to online operations. Fellows rapidly transitioned to support their offices remotely and attended trainings and program events online. Regardless, the greatest and most inspiring transition in the program remains its mission impact—whether online or in person, NNSA offices and their fellows continue to deliver meaningful programmatic impact.







In This Issue

- NNSA Acts in Emergency
- Rescuee Meets Legal
- NNSA Defense Progress in Getting The Job Done
- Rescuee Meets Legal
- Rescuee Meets Legal
- Rescuee Meets Legal

NNSA Completes Security Upgrades At 25 Russian Nuclear Warhead Sites

With the completion of U.S.-Russian security upgrades at 25 Russian Strategic Rocket Forces sites in Orenburg, all of the security work at 25 Russian nuclear warhead sites is complete. The agreement between Presidents Bush and Putin has been finished. The work was carried out through NNSA's Material Protection, Control and Accounting program. The program is managed by the U.S. Department of Energy. "Completing this security work at the Strategic Rocket Forces sites helps to fulfill President Bush's commitment under the Budapest Joint Declaration with Russia, and shows our continued partnership with the Russians," said NNSA Deputy Administrator for Defense Nuclear Security.

10

NOORAH TOUSS PLANTZ PLANT (left) presents a certificate to the Russian Deputy Ambassador to the U.S., Sergey Semyonov (right) during the 10th anniversary of the Budapest Joint Declaration on the elimination of nuclear weapons from the former Soviet Union. (Photo by NNSA)





Operations: Building Next-Generation Leadership

NGFP cultivates future technical leaders in national security. Through NGFP, outstanding students with graduate degrees and career interests in nuclear security technology and policy are appointed to program, functional, and field offices across NNSA.

Mission

NGFP identifies and develops the next generation of exceptional national security leaders to achieve the NNSA mission: Strengthening our nation through nuclear security.

Vision

NGFP aims to be the U.S. Government's model program for developing and retaining top-level national security leadership talent.

Impact

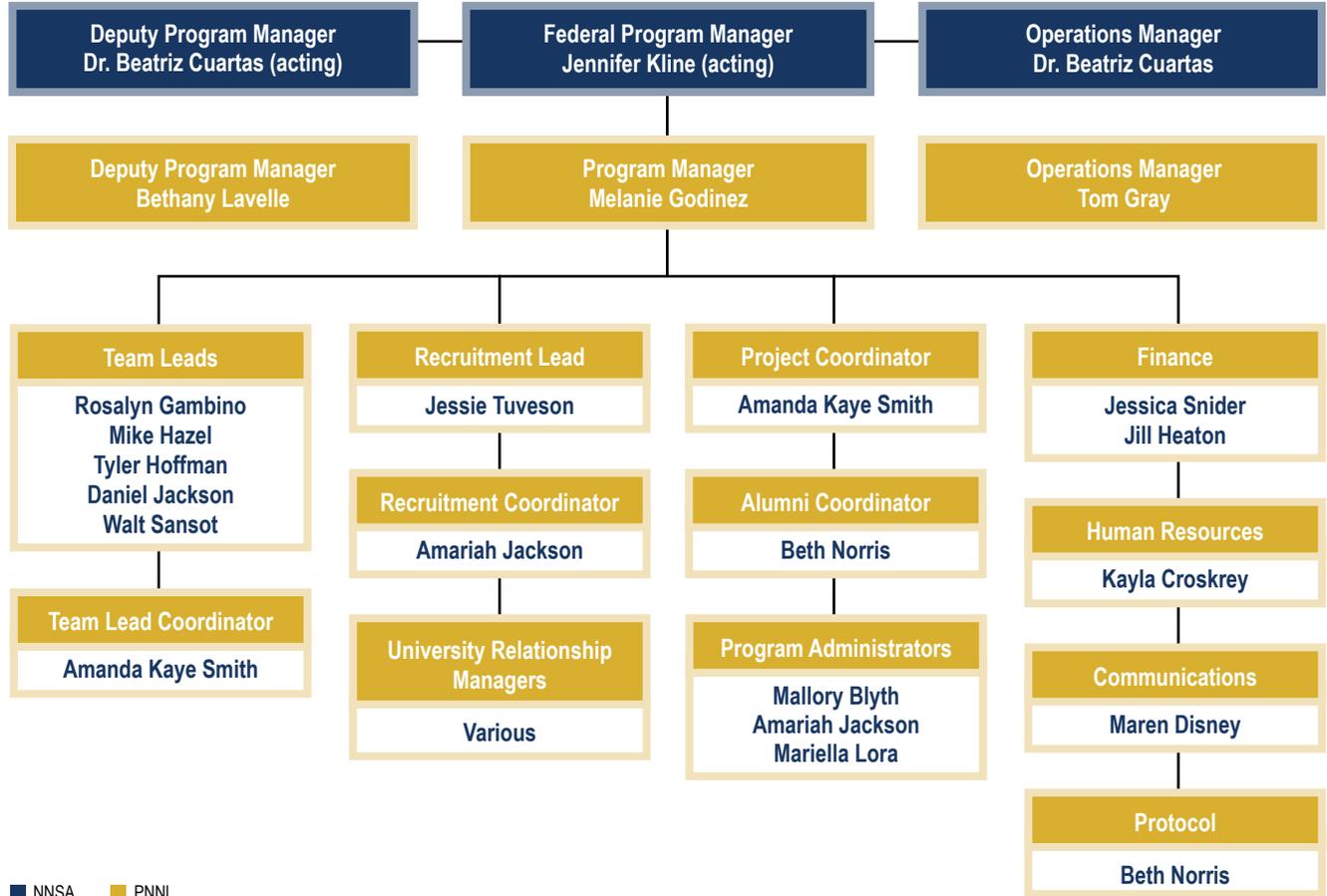
During their one-year assignments, fellows gain unmatched experience through:

- Real-world immersion in national security, technology, and policy;
- Relationships with leading national security experts;
- Hands-on experience in NNSA; and
- Partnering around the globe.



Organization

NGFP is managed by NNSA's Office of Management and Budget (blue boxes) and administered by PNNL (gold boxes), with roles shown in the organizational chart.



Lifecycle

NGFP's annual lifecycle involves simultaneous planning, administering, and implementing three different fellowship classes: onboarding and administering the **current** class of fellows, recruiting and hiring the **next** class, and recruitment planning for the **future** class.

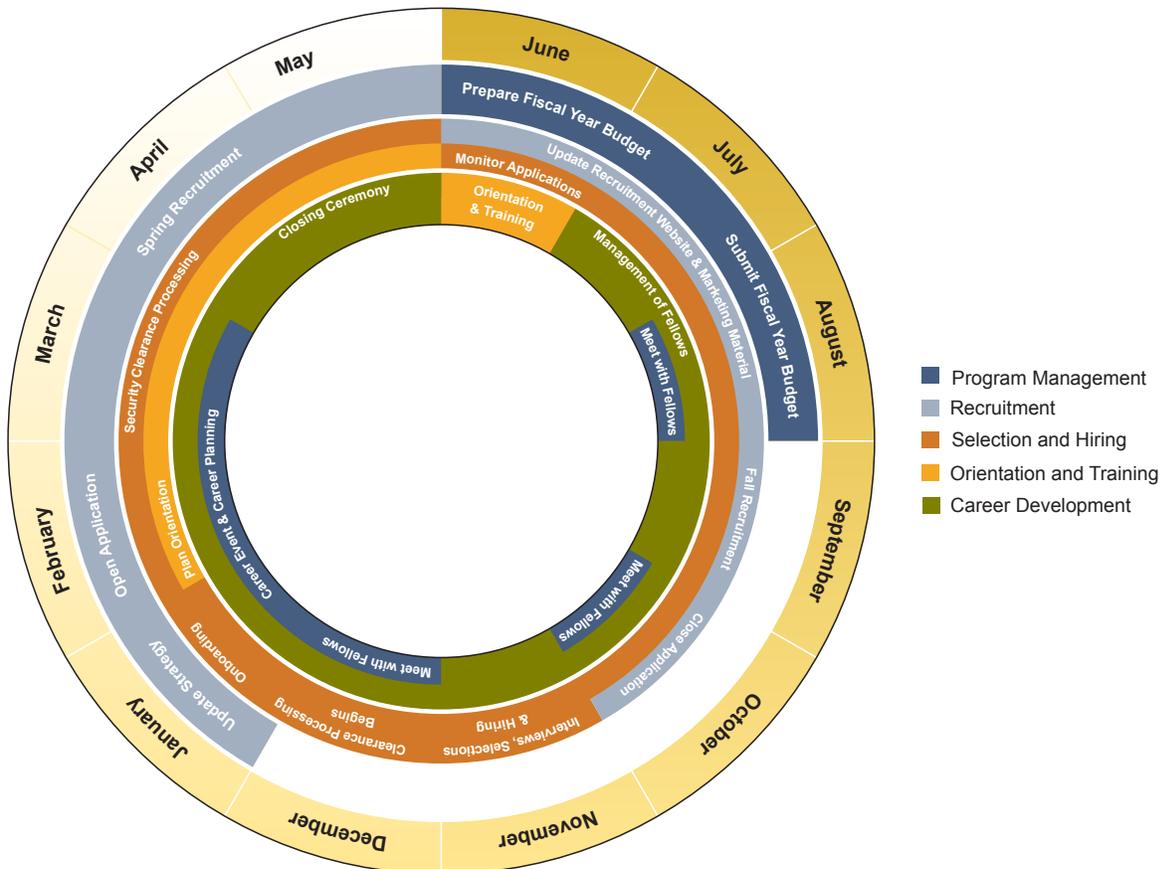


Responsibilities

The NNSA NGFP Federal Program Manager and PNNL NGFP Program Manager share a unified, best-in-class approach based on a common vision and framework organized into five program elements, as shown below.

Program Responsibilities

Program Management	Overseeing all aspects of the program, including the budget, strategy, stakeholder engagement, implementation, evaluation, issue resolution, improvements, and reporting.
Recruitment	Developing and implementing an outreach strategy to meet program objectives. This includes conducting an annual NNSA fellow needs assessment, partnering with universities and professional associations for outreach, working closely with prospective candidates to facilitate the application process, and maintaining the online application system.
Selection and Hiring	Preparing applications, coordinating interviews, onboarding fellows, and beginning fellows' security clearance applications.
Orientation and Training	Conducting an extensive orientation to prepare fellows for their assignments and roles in the federal environment.
Career Development	Introducing fellows to career growth opportunities through interactive sessions with professionals in the nuclear security field.



Methodology: Retaining the Best & Brightest

Recruitment

For the Class of 2019–2020, NGFP sought to recruit a quality pool of candidates for a targeted class size of 60 fellows. Outreach included on-campus recruitment events at 59 partner universities (including eight new partners) plus virtual outreach to over 400 schools, including six virtual sessions to all students. Approximately two-thirds of university partners focus on STEM fields with the remaining third focusing on policy, business (including economics), or multidiscipline fields.

NGFP conducted five additional on-campus recruitment events at NNSA MSI partner universities from the previous class year and added two new MSIs as partner universities. Additionally, NGFP collaborated with the PNNL Research on the Science and Engineering of Signatures (ROSES) Consortium team. Teaming with programs like ROSES provided an opportunity to collaborate with the NNSA’s MSI Partnership Program, identify high-quality applicants with policy and technical backgrounds, and better align with NNSA mission needs.

Throughout the spring and fall quarters, the NGFP recruitment team deployed to universities nationwide to participate in 63 events, including information sessions,

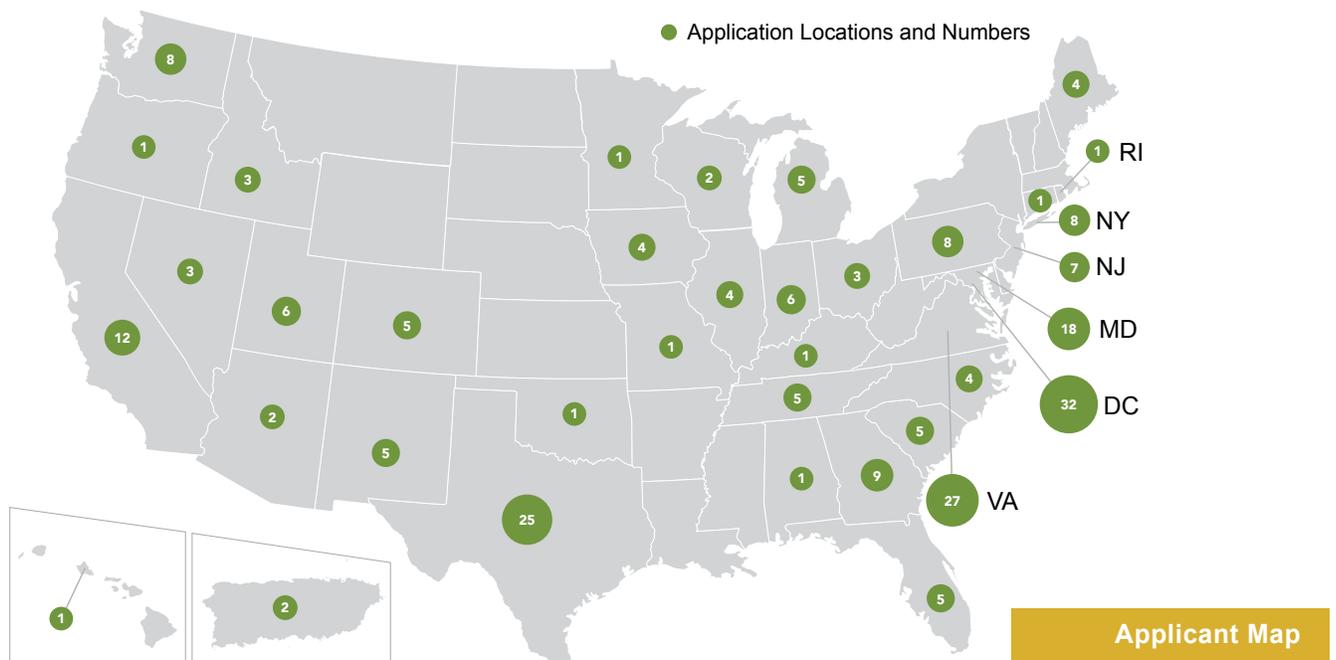
faculty meetings, diversity-focused student meetings, and collaborations with student organizations. Recruiters engaged university faculty and staff and leveraged student organizations and affinity groups, including the Society for Hispanic Professional Engineers, the Society of Women Engineers, and the National Society of Black Engineers. NGFP staff also participated in the American Nuclear Society Student Conference, the Institute of Nuclear Materials Management Annual Conference, and the National Society for Black Engineers Annual Conference.

The recruitment and relationship building resulted in 238 completed applications, of which 81% were recruited from on-campus university partners.

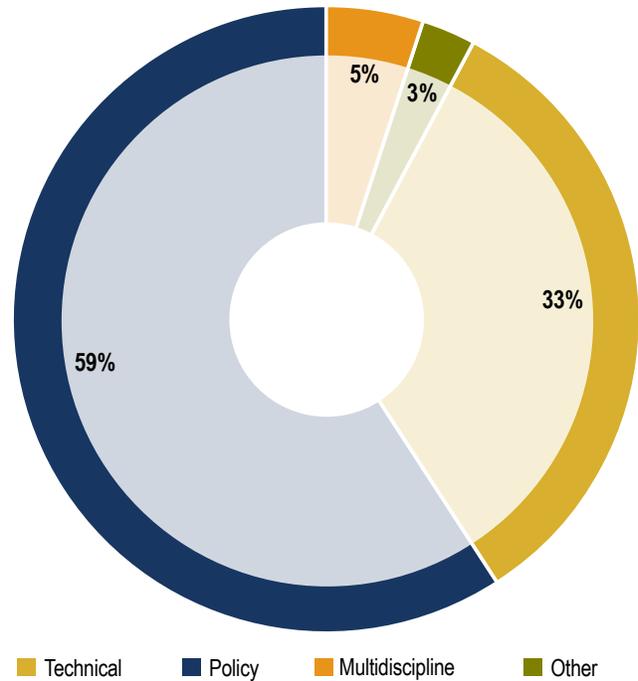
Applicants

Applicants were sourced from across the country. The greatest number of applications came from states near locations home to an NNSA or DOE office or laboratory, including the Washington DC area, Texas, and California.

Applicants with technical (STEM) degrees comprised 33% of the applicant pool, policy-focused applicants (political science, public/international policy, and related



degrees) comprised 59% of the pool, and multidiscipline applicants, those with a master’s degree in a technical field and an undergraduate policy or business degree, totaled 5% of the applicant pool. Other degree types of which NGFP accepts applications but does not target, such as Juris Doctor, comprised 3%. Also within the applicant pool, approximately 22% of applicants had or were completing a doctoral degree, 94% had or were completing a master’s degree, and 11% of applicants were from MSIs. NGFP’s diversity engagement saw greater success as a result of the targeted effort on MSIs. The number of applicants who identified as diversity applicants increased from 9.6% in 2018 to 11.4% in the Class of 2019–2020.



Applicant Backgrounds

Results: Delivering Highest Quality Mission Support

From the applicant pool, NNSA, DTRA, and DOS selected 146 candidates and conducted 388 interviews over a two-week period in late 2018. Offers were extended to candidates in December for positions that began in June 2019.

Highlights from the fellows selected for the Class of 2019-2020 included the following:

- Graduate degrees completed or in pursuit at 33 universities nationwide with advance degrees spanning the technology and policy spectrum, including 11 doctoral candidates;
- Assignments spanning 11 different program, functional, and field offices across the NNSA, plus DTRA;
- Language skills in Arabic, French, Korean, Mandarin, Portuguese, Punjabi, Russian, Spanish, Turkish, Ukrainian, and Urdu;
- Previous experience with the American Nuclear Society, Centers for Disease Control and Prevention, Department of Veterans Affairs, DOE, DOS, International Atomic Energy Agency (IAEA), National Aeronautics and Space Administration, Nevada National Security Site, U.S. House of Representatives, U.S. Agency for International Development, U.S. Army, U.S. Department of Defense (DoD),

U.S. Department of Homeland Security, U.S. Navy Reserves, the National Oceanic and Atmospheric Administration, and the Brookhaven, Los Alamos, Lawrence Livermore, Oak Ridge, Pacific Northwest, Sandia, and Savannah River national laboratories.

The Class of 2019–2020 fellows hailed from universities across the nation, including Puerto Rico, and as far away as the United Kingdom.

The Class of 2019-2020 was the first NGFP class to achieve an almost equal balance of technical and policy fellows, with 50% of the fellows coming from a technical background and an additional 4% coming from a multidiscipline background. The program experienced a 7% growth in technical fellows and 22% of the class possessed two or more graduate-level degrees.



Leadership & Professional Development

Throughout the year, fellows participated in an in-depth orientation, seminars, career development, and networking events across the country. Additionally, fellows partnered with their offices to participate in learning opportunities aligned with their offices' and their individual development needs.

Orientation

During orientation in June, the fellows spent a week at the PNNL campus participating in briefings with nuclear security leaders and subject matter experts, attending historical and technical tours at the Hanford Site, completing hands-on radiological and nuclear training at the HAMMER training facility, and tackling realistic nuclear security policy challenges in a mock congressional hearing. The cohort also spent two days at NNSA Headquarters in Washington DC, where they heard from leaders from across the NNSA. Featured guest speakers included Frank Lowery, NNSA Associate Administrator for Management and Budget; Dr. Dave Rude, former NGFP Federal Program Manager; Deb Gracio, Associate Laboratory Director for the PNNL National Security Directorate; and representatives from across the NNSA program, functional, and field offices.

Trainings, Workshops & Conferences

Throughout the year, fellows participated in diverse learning opportunities tailored to their individual assignments. For example, several fellows attended an Introduction to Radiological and Nuclear Incident Response training at the Defense Nuclear Weapons School. The two-day awareness-level course provided instruction on basic radiation and nuclear science, hazards, and response, including a hands-on radiation practical training. Several fellows also attended the Nuclear Nonproliferation Seminar on Nuclear Reactors and the Commercial Nuclear Industry at Argonne National Laboratory. The seminar included tours of the Purdue University research reactor and Argonne's nuclear chemistry research facility.

Fellows also supported their offices' participation in conferences and events worldwide. For example, several fellows supported their offices' participation at the ICONS 2020 event from February 10–14, 2020. Fellow Alexander Moe was recognized for his work



This fellowship has provided much insight into how the federal government operates in the nuclear industry.

—Jennifer Abdulla

to manage the development and production of the U.S. Government booth, and he also created briefing products for the DOE senior leadership.



Alexander Moe (second from left) with Secretary of Energy Dan Brouillette and Administrator Lisa E. Gordon-Hagerty (middle), and the ICONS team

Fellows used their allotted training funds to build leadership skills and technical expertise through specialized training opportunities and attendance at conferences and workshops across the nation, including the following:

- In support of International Plutonium Disposition program, organized both domestic and international meetings on plutonium management with a variety of international partners, including the United Kingdom and Japan;
- Supported the International Medical Management of Radiological Injuries Course through NATO in Rome, Italy;
- Planned the 2020 Additive Manufacturing Workshop to bring together subject matter experts in Additive Manufacturing from around the country to encourage cross-governmental collaboration;
- Attended the Joint Standing Committee on Civil Nuclear Cooperation held in Taipei, Taiwan;

- Participated in the 10th meeting of the U.S.-Japan Nuclear Security Working Group where participants reported on key nuclear security issues;
- Participated in a licensing risk assessment workshop in the Philippines; and
- Completed training on the disarmament and nonproliferation of chemical, biological, and nuclear weapons in Den Haag, Netherlands.



Fellows at a briefing during the NSE event



Fellows at the Remote Sensing Laboratory



Fellows at the Defense Nuclear Weapons School

Aspiring Leaders Certificate Program

The Class of 2019-2020 was the first cohort to participate in the Aspiring Leadership Certification Program in the history of NGFP. The multi-week event covered topics including self-awareness, teamwork, business management strategies and key workplace leadership principles, and courses on interpersonal skills, collaboration, effective communication, and maximizing employee engagement.

National Security Enterprise Briefings

In October 2019, fellows attended a two-day NSE event that included a luncheon with the NNSA Deputy Administrator of Defense Nuclear Nonproliferation, Dr. Brent Park; a tour of the Remote Sensing Laboratory at Andrews Air Force Base and DTRA; senior leader and peer panels with DTRA staff members and a question and answer session about the DTRA Defense Nuclear Weapons School; and a Congress and budgeting overview with government affairs professionals. This annual career event empowered fellows with understanding and networking opportunities within the broader national security community.

Career Development Workshop

In January, fellows attended a two-day career development workshop where they learned practical tools and made professional connections to continue their careers in the NSE post-fellowship. Fellows met with PNNL staffing consultants regarding tips for becoming a preferred candidate and networking within the NSE. The event also welcomed leaders from across the NSE to share career advice and potential opportunities for exploring a career within the NNSA and broader NSE. New to the workshop was a career fair where representatives from across the U.S. Government, DOE/NNSA sites, government contractors, and industry partners connected with fellows who had not yet received a post-fellowship employment offer. Read more about the event in “DTRA Mentors Future Nuclear Enterprise Fellows” (<https://bit.ly/3fXUfPZ>).



Being a fellow for the Los Alamos Field Office will be an experience I will cherish for a lifetime.

—Cesar Dominguez

Closing Ceremony & Alumni Reception

Like many graduates crossing the finish line in 2020, the Class of 2019–2020 had to transition its closing ceremony to a virtual environment. But that did not stop NNSA and PNNL leaders from tuning in to honor the cohort virtually. The online event featured keynote speaker Lisa E. Gordon-Hagerty, DOE

Under Secretary for Nuclear Security and NNSA Administrator, as well as others from NNSA and PNNL who recognized the fellows for their work across the NSE. During the ceremony, the class shared a presentation highlighting their diverse assignments and individual posters from each graduate were made available online at <https://bit.ly/2Huj3SA>.



Fellows and presentations at the Career Skills Workshop



This fellowship was an unparalleled opportunity to learn and jump-start my career in the Nuclear Security Enterprise. I had the fortune to see a few of our nation’s most innovative technologies as well as learn directly from some of the leading experts at the national laboratories, military, and government.

—Arnold Eng

NGFP Class of 2019–2020

By the Numbers

47

FELLOW
GRADUATES

33

UNIVERSITIES
REPRESENTED

50%

FELLOWS WITH
A TECHNICAL
BACKGROUND

44%

FELLOWS WITH A POLICY/
BUSINESS BACKGROUND

4%

FELLOWS WITH A HYBRID
TECHNICAL-POLICY
BACKGROUND

~238

APPLICANTS

388

INTERVIEWS

146

CANDIDATES

550+

ALUMNI TO DATE

36%

FELLOWS ACCEPTED
FEDERAL POSITIONS
WITH NNSA

55%

FELLOWS ACCEPTED
POSITIONS TIED TO
NATIONAL SECURITY
(i.e., DOE, DOS, NATIONAL
LABORATORIES)

11

DIFFERENT PROGRAM,
FUNCTIONAL, AND FIELD
OFFICES SUPPORTED
BY FELLOWS (PLUS DTRA)

Mission Impact

The following are highlights from fellows' assignments. For more information, see the fellows' posters from closing ceremony that are available online at <https://bit.ly/2Huj3SA>.

Jennifer Abdulla, NA-APM-1.4 Savannah River Project Management Office, completed training on the disarmament and nonproliferation of chemical, biological, and nuclear weapons in Den Haag, Netherlands through a program with the Organisation for the Prohibition of Chemical Weapons.

Kelsae Adame, NA-LL Livermore Field Office, worked on projects throughout the NA-21 Global Material Security office with a large focus on international nuclear security regulations, including helping with assessments on multiple countries, focused on regulated areas such as physical protection systems and nuclear material accountability and control.



Fellows visit historic and mission-critical sites, like the B Reactor at Hanford Site, during orientation in Washington



This fellowship gave me a great insight into the many facets of nuclear security. Working at a national laboratory gave me an understanding of how headquarter missions are implemented at sites.

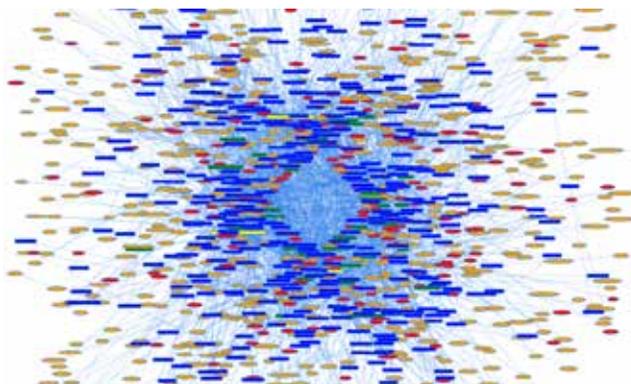
—Kelsae Adame



This experience allowed me to step out of my comfort zone and see first-hand how government works and, when done right, can make a positive impact on the lives of others.

—Alexander Godinez-Robinson

Wardah Amir, NA-213 Office of Nuclear Smuggling Detection and Deterrence (NSDD), was selected to lead a data project for NSDD to analyze data collected on events attended or supported by NSDD and produced visualizations that are useful for program management.



Wardah Amir supported a project visualizing programmatic data for her office

Simón Arias, NA-19 Office of Production Modernization, joined the Energetic Materials Characterization project team in preparing for the critical decision process and initiating an analysis of alternatives study plan for the project.



Conceptual design for the Energetic Materials Characterization facility, a project Simón Arias supported

Whitney Baillie-Berring, NA-233 Office of Material Disposition, in support of the International Plutonium Disposition program, organized both domestic and international meetings on plutonium management with a variety of international partners, including the United Kingdom and Japan.



Whitney Baillie-Berring (right) and the NA-23 Office of Material Management and Minimization team in Tokyo, Japan

Jessica Bateman, NA-81 Counterterrorism and Counterproliferation Office of Nuclear Incident Policy and Cooperation, supported and updated the International Medical Management of Radiological Injuries Course through NATO and supported various tabletop exercises and scenario-based policy discussions.



Jessica Bateman (right) at the International Medical Management of Radiological Injuries Course in Rome, Italy



This fellowship offered me the opportunity to gain valuable experience in the government where I can apply my previous experience in nonproliferation and my coursework in security and technology.

—Blake Campbell

Ryan Bolt, NA-20 Office of Defense Nuclear Nonproliferation Office of the Deputy Administrator, supported the coordination and development of logistics and preparatory materials for the U.S. delegation attending the 2020 ICONS event; compiled and edited policy memos, talking points, and background papers for the Deputy Administrator for Defense Nuclear Nonproliferation; and managed action items for his office.

Blake Campbell, NA-242 Office of Nuclear Export Controls, conducted technical and end-user risk assessments of dual-use export licenses and foreign engagement proposals for chemical, biological, and nuclear proliferation concerns; participated in the interagency licensing dispute resolution process; and helped deliver export control licensing training to Malaysian export officials in Kuala Lumpur, Malaysia.



Blake Campbell (left) at export control training in Malaysia



This fellowship afforded me the opportunity to participate in multidisciplinary teams and solve real-world problems.

—Caitlin O'Grady



My unique fellowship experience provided me both programmatic and high-level exposure within NNSA.

—Simón Arias

Celene Chavez, NA-SN Sandia Field Office, assisted in forming the new safety training for the Albuquerque Complex.

Miguel Cortez, NA-SN Sandia Field Office, helped provide oversight of a number of projects involving Sandia National Laboratories reviewing work requirements, project technical progress, and performance assessments.



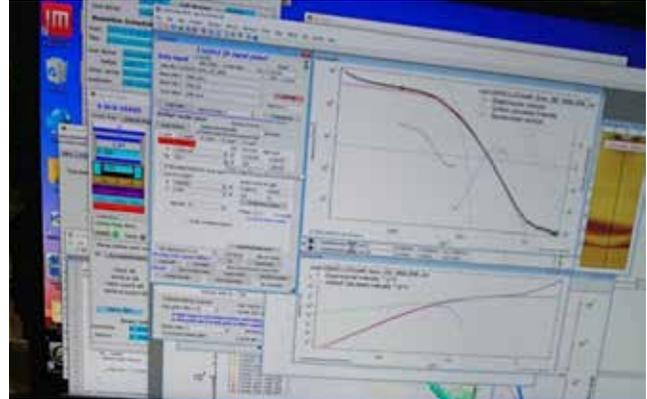
Fellows tour the Waste Isolation Pilot Plant in Carlsbad, NM

Cesar Dominguez, NA-LA Los Alamos Field Office, participated in various projects/assessments alongside the Mission Assurance and Infrastructure team, under the Landlord and Stewardship Program, consequently transitioning into Technical Operations and Nuclear Safety and Engineering Readiness working in safety system oversight, fire protection, and field operations.

Daniel Ellis, NA-LA Los Alamos Field Office, was involved in assessments of safety system oversight, program improvement, and the nuclear criticality safety program.

Arnold Eng, NA-APM-1.5 Los Alamos National Laboratory Project Management Office, assisted the NNSA Acquisition and Project Management Office at Los Alamos with the design oversight of the proposed Transuranic Liquid Waste Treatment Facility.

Jose Ali Espitia, NA-LL Livermore Field Office, worked in various capacities at Lawrence Livermore National Laboratory while collaborating with various experts in different subject matters and traveling to other national laboratories for experiments.



Jose Ali Espitia supported a project using beamline data acquisition at Argonne National Laboratory

Hilda Fontes, NA-NV Nevada Field Office, reviewed technical contracts to address DOE/NNSA requirements for high-hazard nuclear operations, supported a Federal Readiness Assessment evaluation, and assisted during project management reviews.



Hilda Fontes at the Sedan Crater at the Nevada National Security Site



The fellowship opened my eyes to new career paths and pushed me out of my professional comfort zone.

—Jessica Bateman



The fellowship provided me with greater insight into the enterprise and valuable hands-on training and experience.

—Miguel Richardson

Hannah Gardiner, NA-115 Office of Engineering and Technology Maturation, planned the 2020 Additive Manufacturing Workshop to bring together subject matter experts in additive manufacturing from around the country to encourage cross-governmental collaboration.



Hannah Gardiner with Reveille IX at the America Makes Technological Review and Exchange



The fellowship allowed me to expand my experimentalist skillset by allowing me to work in various capacities throughout the Lawrence Livermore National Laboratory while collaborating with various experts in different subject matters and traveling to other national laboratories for experiments.

—Jose Ali Espitia

Alexander Godinez-Robinson, NA-23 Office of Material Management and Minimization, coordinated the office's deliverables for ICONS 2020 in Vienna, Austria, including planning and reviewing cooperative activities to prepare for various bilateral meetings with partner states.



Fellows on a river cruise

Aimee Gonzalez, NA-50.1 Office of Safety Transformation, supported her office with a design that includes software with the ability to go through data in any format and create a functional output that can be widely understood by those who need it and accessible when needed while keeping security in mind.



Aimee Gonzalez (left), Celene Chavez (lower right), and Diego Lozano Jimenez (upper right) in front of the Capitol Building in Washington DC

Miguel González-Sierra, NA-APM-1.3 Uranium Processing Facility Project Management Office, supported his project office in construction environmental safety and health, quality assurance, and project controls and provided oversight on subcontracted work scope.

Taylor Hart-McGonigle, NA-211 Office of International Nuclear Security, attended the Joint Standing Committee on Civil Nuclear Cooperation held in Taipei, Taiwan and participated in the nuclear security working group to represent NA-211's interests and determine activities for 2020.



Taylor Hart-McGonigle (second from left) with the Joint Standing Committee on Civil Nuclear Cooperation in Taipei, Taiwan

Jared Hatch, NA-EA Office of Congressional Affairs, created an image to correct online mapping to eliminate a security concern to an NNSA site and preventing unnecessary risk.

Edward Hoegg, NA-MB-92 Office of Program Analysis and Evaluation, worked on the Power Sources and Combined Radiation Effects for Survivability Testing Capability Analysis of Alternatives, and analyzed the Programmatic Recapitalization Working Group and the Mobile Guardian Transport Independent Cost Review.



Fellows at the Remote Sensing Laboratory at Joint Base Andrews



Being part of NNSA helped me see and be a part of the application of the science I had studied.

—Miguel Cortez

Timothy Jacomb-Hood, NA-233 Office of Material Disposition, was tasked with creating an Enhanced Dilution Process program requirements document to coalesce the distributed programmatic knowledge at the Savannah River Site.



Timothy Jacomb-Hood (right) touring the Savannah River Site tank farms with facility expert Jeff Ledbetter (left)

Rebecca Lewis, NA-22 Office of Defense Nuclear Nonproliferation Research and Development, served as the point of contact in the NA-22 office for nuclear data projects and interagency collaborations, including organizing the program needs component of the 2020 Workshop on Applied Nuclear Data Activities, which occurred in March 2020.



Rebecca Lewis (middle) at the 2020 Workshop on Applied Nuclear Data Activities

Tyler Lo, NA-531 Office of Packaging and Transportation, was tasked with constructing a training and templates for Offsite Transportation Authorization use.

Haylie Lobeck, NA-192 Office of Tritium and Domestic Uranium Enrichment, worked within the Tritium Sustainment Program to develop a plan to increase tritium production to meet a growing national demand.



fellows collecting salt samples during a tour of the Waste Isolation Pilot Plant transuranic waste site

Diego Lozano Jimenez, NA-531 Office of Packaging and Transportation, worked closely with federal packaging certification engineers to manage and ensure completion of a consolidated Safety Analysis Report for Packaging revision, including formulating a project management plan that establishes the framework for managing the revision project.



Diego Lozano Jimenez (front left) with the team for the 9977 Safety Analysis Report for Packaging revision

Zachary Matheson, NA-114 Office of Advanced Simulation and Computing, helped prepare a report to Congress on the use of artificial intelligence and machine learning within the NNSA.



Zachary Matheson in a photo created by a demonstration system using artificial intelligence to mimic stained glass in real-time

Alexander Moe, NA-21 Office of Global Material Security, participated in the ICONS 2020 conference at the IAEA in Vienna, Austria, including attending bilateral meetings with senior NNSA and DOE principals, assisting the IAEA in the organization and execution of the conference, and engaging with foreign counterparts at multiple events to advance U.S. nuclear security objectives.

Amber Morgan, NA-241 Office of International Nuclear Safeguards, supported interagency preparation and engagement with international partners during a regional workshop on expanding access to peaceful uses under the Non-Proliferation Treaty framework to learn about partner needs and opportunities for cooperation.



Amber Morgan (back, fourth from left) with participants of the Non-Proliferation Treaty 50th Regional Workshop in Abuja, Nigeria



I appreciated my fellowship with Nuclear Smuggling Detection and Deterrence for its leadership that trusted my ability to lead, experiences that provided me the opportunity to grow, and colleagues I will call friends no matter where I go.

—Wardah Amir

Willa Nathan, *DTRA*, attended ICONS 2020 as part of the DTRA delegation and presented DTRA and DTRA’s IAEA collaboration at the separate e-Learning booth.

Daniel Niez, *NA-10 Office of Defense Programs*, Deputy Administrator’s Action Group, volunteered to serve as Deputy Project Manager for the Reserve Officer Training Corps (ROTC) Internship Program, running all aspects of the internship program, including interfacing with ROTC Commanders at universities, pitching the program to students, and selecting the interns after assessing their applications.

Caitlin O’Grady, *NA-125.1 B61-12 Life Extension Program*, supported the planning, research, and execution of the weapon’s life extension program, providing technical knowledge to the nuclear components team and assisting in oversight of the various laboratories and sites involved in the program.



From left, Tyler Lo, Jana Starks, Caitlin O’Grady, and Haylie Lobeck during a tour of the White House Press Briefing Room

Nic Pilley, *NA-195 Lithium Production Modernization Office*, worked on multiple products and deliverables linked to Lithium Processing Facility modernization project, including deliverables such as construction project data sheets, program hot topics, and congressional budget justifications.



Fellows during a tour of the White House

Annelise Plooster, *NA-232 Office of Nuclear Material Removal*, participated in the 10th meeting of the U.S.-Japan Nuclear Security Working Group where participants reported on key nuclear security issues, including minimizing highly enriched uranium, enhancing the physical protection of nuclear materials, integrating national and emergency response plans, reducing material attractiveness, and securing nuclear materials in transport.



Annelise Plooster (back, sixth from right) with participants at the 10th meeting of the U.S.-Japan Nuclear Security Working Group



Being an NNSA Graduate Fellow gave me the opportunity to understand the importance of NNSA’s mission and the impact to our nation.

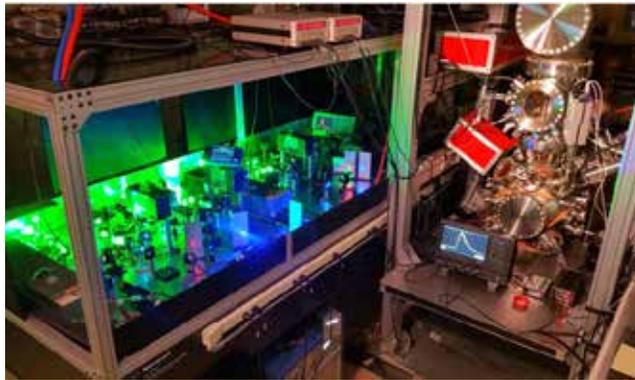
—Hilda Fontes



This fellowship connected me with fantastic colleagues, mentors, and leaders throughout the Nuclear Security Enterprise.

—Ryan Bolt

Miguel Richardson, NA-LL Livermore Field Office, developed a Thorium ionization scheme for the Resonance Ionization Mass Spectroscopy (RIMS) group to add additional capabilities to the RIMS system.



Miguel Richardson helped develop additional capabilities for the RIMS system

Samuel Rising, NA-242 Office of Nuclear Export Controls, participated in a licensing risk assessment workshop in the Philippines, where he led several risk assessment exercises and group discussions with Philippine government officials.

Gabriel Sandler, NA-1.3 Office of Cost Estimating and Program Evaluation, was independently reviewing several analysis of alternative reports, including the Tritium Finishing Facility, Combined Radiation Environments for Survivability Testing, and Digital Infrastructure Capabilities Enhancement analysis of alternatives.



The fellowship provided a structured yet flexible transition to a career in nuclear security.

—Erica Wolf

Anthony Santo Domingo, NA-NV Nevada Field Office, participated as both a team member and coordinator of a Federal Readiness Assessment, including reviewing procedures and processes, interviewing various laboratory and contractor personnel, and observing operations, ultimately producing a final report of each element.



Anthony Santo Domingo at DOE

Sydney Shuk, NA-NV Nevada Field Office, integrated dose recording and reporting technology and simulator training technology at the Nevada National Security Site based on technologies used at other DOE facilities.



Sydney Shuk at the Experimental Breeder Reactor during a tour of Idaho National Laboratory

Cory Smith, NA-212 Office of Radiological Security, supported radiological security projects in Africa and the Middle East and accompanied a team visit to South African partner sites, providing detailed trip reports and contributing to a U.S. Embassy cable on the visit.

Jana Starks, NA-125.4 W87-1 Modification Program Office, supported the W87-1 Modification program through its next phase, developing and integrating the planning project controls document into the enterprise scheduling software, called LAPS.



Jana Starks at the Vandenberg Air Force Base

Erica Symonds, NA-24 Office of Nonproliferation and Arms Control, created a comprehensive catalogue of tools and technology that NA-24 develops to enable the IAEA to conduct nuclear safeguards activities around the world and that the United States and others can use to verify compliance with international agreements and treaties.



Fellows at Purdue University's nuclear research reactor

Brandon Thompson, NA-191 Plutonium Program Office, spearheaded organizational effectiveness initiatives to boost collaboration and better enable the team in its mission to produce pits and recapitalize infrastructure safely, securely, and effectively.

Bryant Vande Kolk, NA-113 Office of Experimental Sciences, supported the strategic vision development of NA-11 by performing a literature review for science-based stockpile stewardship needs, collaborated with leadership and program managers both in and out of his office, and organized responses from an office-wide activity designed to garner broad discussion of possible needs.

Erica Wolf, NA-213 Office of Nuclear Smuggling Detection and Deterrence, supported the Green Borders Security Initiative, which seeks to improve foreign partner capabilities to counter nuclear smuggling on green borders and administrative lines of uncontrolled regions through strengthening radiation detection, patrol, interdiction, and inspection capabilities of security teams.

Sidra Zia, NA-212 Office of Radiological Security, helped to manage cooperative efforts and communication regarding radiological security between NNSA and China's Ministry of Ecology and Environment.



Sidra Zia (second from left) with Office of Radiological Security and China's Ministry of Ecology Environment team members



This fellowship really highlighted the importance of communication. Whether it is written or oral, the ability to let your ideas be known clearly and concise is key.

—Diego Lozano Jimenez

Conclusion: Retaining Next-Generation Quality Talent

NGFP remains the premier program for bringing passionate and talented graduate-level students into the NNSA and the national security enterprise. In recent years, more than 80% of each fellowship cohort has secured employment with ties to national security.

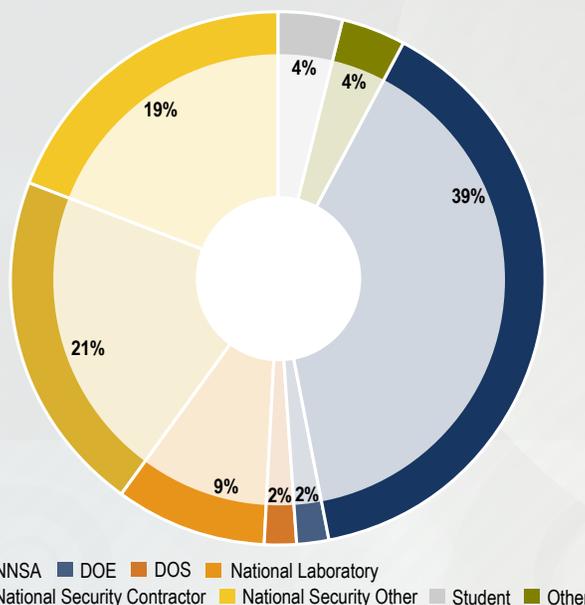


Where They Are Now

After completing their assignments, the majority of the Class of 2019–2020 accepted positions where they continue to support the global security mission within government, industry, private sector, or academia. The list below indicates the latest status of fellows as of the summer of 2020.

NNSA (including contractors)

- Jennifer Abdulla, NNSA NA-MB-1 Office of the Associate Administrator for Management and Budget
- Celene Chavez, Project Enhancement Corporation, contractor to NA-84
- Miguel Cortez, NNSA NA-SN Sandia Field Office
- Daniel Ellis, NNSA NA-LA Los Alamos Site Office
- Hilda Fontes, NNSA NA-NV Nevada Field Office
- Hannah Gardiner, NNSA NA-115 Office of Engineering and Technology Maturation
- Alexander Godinez-Robinson, NNSA NA-MB Office of Management and Budget
- Miguel González-Sierra, NPO-70 Programs and Projects
- Taylor Hart-McGonigle, NNSA NA-211 Office of International Nuclear Security
- Jared Hatch, NNSA NA-MB-1.4 Office of Budget
- Edward Hoegg, NNSA-191 Plutonium Production Office
- Rebecca Lewis, NNSA NA-113 Office of Experimental Sciences
- Haylie Lobeck, NNSA NA-192 Office of Tritium and Domestic Enrichment
- Zachary Matheson, NNSA NA-MB-92 Office of Analysis and Evaluation
- Alexander Moe, NNSA NA-1 Office of the Administrator
- Amber Morgan, Mele Associates, contractor to NA-241
- Caitlin O’Grady, NNSA NA-125.1 Life Extension Program Division
- Nic Pilley, Leidos, contractor to NA-195
- Annelise Plooster, Longenecker and Associates, contractor to NA-23
- Gabriel Sandler, NNSA NA-MB-92 Office of Analysis and Evaluation
- Anthony Santo Domingo, NNSA NA-NV Nevada Field Office
- Erica Symonds, MELE Associates, contractor to NA-24
- Erica Wolf (Spell), NNSA NA-1.1 Office of Policy and Strategic Planning



Class of 2019–2020 Post-Fellowship Employment

National Security Enterprise and Stakeholders

- Kelsae Adame, Akima Infrastructure Services
- Wardah Amir, Department of State
- Simón Arias, Sol Oriens
- Jessica Bateman, Summit Exercises and Training
- Ryan Bolt, IAEA
- Blake Campbell, Systems Planning and Analysis, Inc.
- Cesar Dominguez, Los Alamos National Laboratory
- Jose Ali Espitia, Oak Ridge Institute for Science and Education
- Arnold Eng, Los Alamos National Laboratory
- Aimee Gonzalez, Consolidate Nuclear Security
- Tyler Lo, Northrop Grumman
- Diego Lozano Jimenez, Northrop Grumman
- Willa Nathan, General Dynamics Information Technology
- Daniel Niez, ManTech
- Samuel Rising, Deloitte
- Sydney Shuk, Mission Support and Test Services, LLC
- Cory Smith, DOE
- Brandon Thompson, Sol Oriens
- Bryant Vande Kolk, Northrop Grumman Mission Systems
- Sidra Zia, Brookhaven National Laboratory

Other

- Whitney Baillie-Berring, Unavailable at time of publication
- Timothy Jacomb-Hood, Texas A&M University
- Miguel Richardson, Florida A&M University
- Jana Starks, Unavailable at time of publication

Looking Forward

While the Class of 2019–2020 has departed on its post-fellowship journey, the Class of 2020–2021 came aboard in June 2020 as the program’s largest class to date. The class features 54 fellows spanning 11 program and site offices plus DTRA and DOS. While the class onboarded and deployed to their assignments virtually (a first in the program’s history), they are already making valuable contribution to their offices. Stay tuned for highlights from their cohort in the 2020–2021 annual report.

Dr. Dave Rude, former NNSA Chief Learning Officer and NGFP Federal Program Manager, after a career of almost 41 years, retired from federal service in August. The program is grateful for his leadership and support of NGFP and wish him well in the next phase of his career. Jenny Kline, the Deputy Federal Program Manager, was selected to serve as Acting Federal Program Manager during this transition period, and Julie Spyres was announced as the new NNSA Chief Learning Officer in late 2020.



Class of 2020–2021 fellows

Continuous Improvement

To enhance its program management approach and deliver a productive experience for fellows and the offices they serve, the program conducted a mid-year survey and issued an enhancement matrix to address opportunities for continuous improvement. Based on the feedback and results, the program implemented a suite of tools and touch-points, including an internal SharePoint site to consolidate fellow resources into one easily accessible location, hosting monthly Federal Program Manager meetings to give fellows increased engagement with program leaders, and conducting the NNSA NGFP Job Fair to help fellows in their post-fellowship career journey. The program is compiling a return on investment report to evaluate the impact of these and other continuous improvement efforts made in recent years; the results are forthcoming in 2021.

In its ongoing effort to evolve and enable a productive experience for fellows and the offices they serve, the program is always open to building new relationships with new NSE leaders, universities, student organizations, and industry partners. If you are interested in learning how you can engage with NGFP, contact ngfp@pnnl.gov.

Alumni Spotlight

NGFP Strengthening Public Service Though Diversity: Women of Color Share their Experiences in Nuclear Security

In late May, NGFP alumna Wardah Amir (Class of 2019–2020), Mareena Robinson Snowden (Class of 2017–2018), Tracey-Ann Wellington (Class of 2015–2016), Lauryn Williams (Class of 2018–2019), and Erica Wolf (Class of 2019–2020) joined the Women of Color Advancing Peace and Security Chemical, Biological, Radiological, and Nuclear Policy Working Group for a panel discussion on “Experiences of Women of Color in the NNSA Graduate Fellowship.” The team shared their experiences as fellows and as developing leaders within the NSE. Tune into the session at <https://bit.ly/3kKGoOd>.

Following their fellowships, all of the panelists pursued employment within national security:

- Wardah is a national security advisor with the DOS Bureau of International Security and Nonproliferation.
- Mareena is a senior engineer in the National Security Analysis Department at Johns Hopkins University Applied Physics Laboratory.
- Tracey-Ann is a technical staff member at Oak Ridge National Laboratory.
- Lauryn is a policy analyst at the Defense Technology Security Administration in the DoD Office of the Secretary of Defense for Policy.
- Erica is a policy analyst with the NNSA Office of Policy and Strategy Planning.



My fellowship not only took me to places around the world to counter proliferation. It also introduced me to opportunities that were once hard to imagine and mentors who were once colleagues but now are friends.”

—Wardah Amir

Learning with Language

NGFP alum and quality assurance engineer Maribel Dominguez championed the NGFP value to build future leaders by spending her Fridays working with native Spanish-speaking students who are learning English as a second language. Her efforts were featured on the NNSA news web site in [“Los Alamos Field Office engineer uses language to promote learning.”](#) Maribel was introduced to NNSA and to Northern New Mexico in her Class of 2016–2017 fellowship in which she supported the Los Alamos Field Office.



Celebrating Nuclear Security Professionals

NGFP alum Karen Ventura was announced the 100th woman in nuclear security to achieve the designation of Certified Nuclear Security Professional by the World Institute for Nuclear Security, or WINS. As an organization that strongly supports gender parity, WINS through its Gender Champions Programme has made commitments to increase the representation of women in nuclear security and to highlight the positive impact of a more diverse and inclusive nuclear security sector. Karen was a fellow in the Class of 2018–2019, and she went on to become a program manager in nonproliferation and arms control research and development at the Pantex Plant. Read more about Karen and her recent recognition in [“Celebrating the 100th Woman in Nuclear to Become a WINS CNSP.”](#)



Advancing Global Security

In the Class of 2008–2009 annual report, Dr. Clark Cully hoped to “use his background to advance the field of global security”—and that he has! Dr. Cully serves as Senior Advisor to the DoD Chief Information Officer. His responsibilities include advising on emerging technology, driving innovation, and implementing DoD’s Digital Modernization Strategy.



“NGFP launched my continued career in public service by first introducing me to the wide-ranging opportunities for technical experts across the national security community. It provided a solid foundation on emerging security challenges, cutting-edge technology development, and interagency collaboration,” said Dr. Cully.

Prior to joining DoD, Dr. Cully was an advisor in the Office of the Under Secretary of Defense for Policy, where he helped write the National Defense Strategy, the DoD Cyber Strategy, the DoD 5G Strategy, and DoD Cyber Posture Review. He has led various teams supporting innovation, nuclear weapons policy, and command and control modernization. Dr. Cully also worked for the Director of Defense Research and Engineering, the U.S. Senate Appropriations Committee, NATO HQ Afghanistan, DOE, and the National Academy of Sciences. Dr. Cully holds a Ph.D. in high-energy physics from the University of Michigan for research conducted at Fermi National Accelerator Laboratory.

During his fellowship, Dr. Cully served the NA-22 Nonproliferation Research and Development.

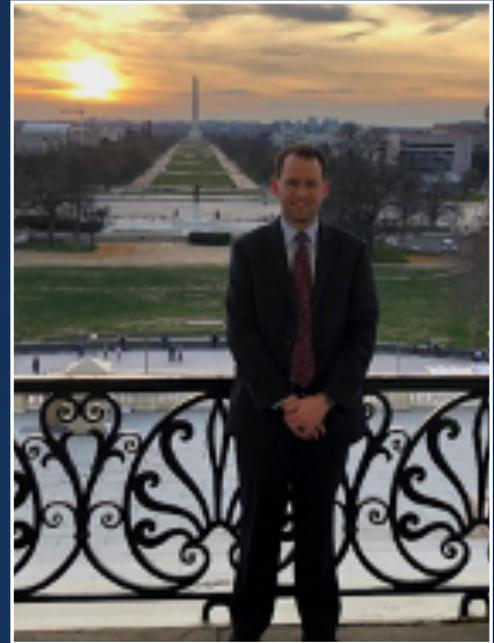
Committed to Fellowship

Merit Schumaker was awarded a fellowship with the American Political Science Association for Representative Bill Foster (IL-11) at the U.S. House of Representatives. The American Political Science Association (APSA) Congressional Fellowship Program is a highly selective, nonpartisan program devoted to expanding knowledge and awareness of Congress.

“This APSA Congressional Fellowship gave me the unique opportunity to peak behind the curtain of Congress: I interacted with various senators and representatives, learned how the Science, Space, and Technology committee holds hearings and mark-ups for bills, and experienced a different set of issues outside of my normal subject matter expertise, such as artificial intelligence, cybersecurity, patent law, the DOE Office of Science, environmental issues, and STEM education advocacy,” said Merit.

During his fellowship in the Class of 2015–2016, Merit served in NA-123 Office of Technology Maturation, where he stayed on after his fellowship as a general engineer and returned to after APSA.

Want to learn more about our alumni? Join us on LinkedIn or subscribe to our NGFP quarterly newsletter by contacting ngfp@pnnl.gov.



Appendix: Fellow Biographies





Jennifer L. Abdulla

NA-APM-1.4 Office of Acquisition and Project Management, Savannah River
Project Management Office – Aiken, SC

Experience

- Purchasing Manager, DuraServ Corporation dba Cookson Door Sales of Arizona
- Buyer, Barron Lighting Group
- Procurement Manager/Project Administrator, Systems Integration Department, Clearwing Productions Arizona LLC
- Purchasing Manager/Shipping Manager, Pentas Controls
- Buyer II, Contracting Division, Escondido, CA and Tempe, AZ, Southern California Sound Image Inc.

Accomplishments

- Summa cum laude graduate, studying international terrorism, homeland security, weapons of mass destruction, and sex crimes
- Earned a partial scholarship to study counterterrorism and international policing in Jerusalem, Israel with TAM-C Solutions
- Over 15 years of management experience in various industries with diverse experience including nuclear service and construction subcontracting
- Oversaw purchasing of electronic components for safety- and non-safety-related nuclear modules according to Nuclear Regulatory Commission 10 Code of Federal Regulations Part 21 standards
- Volunteer photographer for various causes and organizations, including Armored Combat League, International Medieval Combat Federation, Northern Arizona Tattoo Festival, Labyrinth Masquerade, multiple roller derby leagues, and the Phoenix Fan Fest and Phoenix Film Festival
- Familiar with Arabic, Spanish, French, and Russian languages; currently learning Ukrainian and Turkish

Education

- Master of Arts, Specializing in Global Security, Arizona State University (anticipated 2021)
- Master of Arts, Criminal Justice, Arizona State University
- Bachelor of Science, Criminology/Criminal Justice, Arizona State University

Kelsae Adame

NA-LL Livermore Field Office – Livermore, CA

Experience

- Research Assistant and Book Collaborator for Ankit Panda, The Diplomat
- Technical Consultant and Data Analyst, Mr. Wolf
- Technical Consultant, Quantum Analytica
- Intern, White Sands Missile Range
- Intern, Sandia National Laboratories

Accomplishments

- Led business development, marketing, and regulation work for project focused on commercializing a neutron generator for medical radioisotope creation to be placed locally in hospitals for a more readily available and customizable treatment
- Completed a master's capstone project that was one of two selected from over 100 projects to win a Fung Institute Achievement award
- Presented master's research in University of California Berkeley's graduate slam—a 3-minute pitch competition—and won third place as the only master's student in a group of doctoral candidates
- Member of Berkeley's Nuclear Policy Working Group

Education

- Master of Engineering, Nuclear Engineering, University of California, Berkeley
- Bachelor of Science, Physics, New Mexico Institute of Mining and Technology



Class of 2019–2020



Wardah Amir

NA-213 Office of Nuclear Smuggling Detection and Deterrence – Washington, DC

Experience

- Project Associate, Chemical Security, CRDF Global
- Research Intern, Project on Nuclear Issues, Center for Strategic and International Studies
- Research Intern, Center for Political Military Analysis, Hudson Institute
- Intern, International Security Department, Chatham House
- Intern, Office of Strategy and Policy, Organisation for the Prohibition of Chemical Weapons
- Intern, Research Society of International Law Pakistan

Accomplishments

- Provided research and writing support for the Center for Strategic and International Studies report about restoring restraint on the use of chemical weapons; resulted in a publication in the *Bulletin of the Atomic Scientists* in April 2018, “Enough is enough: holding users of chemical weapons accountable”
- Joined the leadership of the Women of Color Advancing Peace and Security (WCAPS) as a young ambassador and co-chaired the WCAPS Chemical, Biological, Radiological, and Nuclear (CBRN) Working Group
- Led a WCAPS CBRN Working Group webinar on the “Experiences of Women of Color Advancing Chemical Disarmament”
- Provided research and event support to the Chatham House International Security Department and studied the humanitarian impact of nuclear weapons; resulted in a publication in *Pakistan Today* in March 2016, “The path to nuclear disarmament”
- Facilitated the first and second Workshop on Ethical Guidelines for the Practice of Chemistry under the Norms of the Chemical Weapons Convention, which resulted in The Hague Ethical Guidelines; generated a report for the second workshop and a poster and brochure for dissemination
- Compiled 142 existing codes of ethics and conduct for chemistry practitioners into a 1000-page document used as a starting point for a text analysis presented at the workshop
- Proficient in Urdu, Punjabi, and French

Education

- Master of Arts, Security Policy Studies, George Washington University
- Bachelor of Science, Chemical Engineering, Texas A&M University at Qatar

Simón Arias

NA-19 Office of Production Modernization – Washington, DC

Experience

- Donor Relations Associate Manager, Congressional Hispanic Caucus Institute
- Corporate Affairs Associate, Congressional Hispanic Caucus Institute
- Office Assistant, Office of Financial Aid, Johns Hopkins University School of Advanced International Studies
- Director, National Model United Nations
- Senate Intern, Senator Chris Murphy of the State of Connecticut, U.S. Senate

Accomplishments

- Researched and wrote on nuclear weapon arsenals, specifically focusing on assessing conflicts, analyzing diplomatic impacts and solutions, and evaluating challenges inherent to denuclearization
- Participated in a summer graduate program on nuclear nonproliferation at Brookhaven National Laboratory, learning about nuclear fuel cycle, radiological safety protocol, and nuclear nonproliferation policy and procedures concerning national security
- In National Model United Nations, effectively channeled procedural debate within a committee of 200 delegates and produced working papers in acceptable standards for resolution adoption
- Researched and published background guides synthesizing complex issues germane to the international community such as financial inclusivity, alternative and sustainable development, youth empowerment, illicit drug supply, human rights, and renewable energy
- Intermediate fluency in Mandarin and Spanish, beginner fluency in Korean



Education

- Master of Arts, International Relations and Economics, John Hopkins University School of Advanced International Studies
- Bachelor of Arts, International Political Economy and Diplomacy, University of Bridgeport
- Bachelor of Arts, Religion and Politics, University of Bridgeport



Whitney Baillie-Berring

NA-233 Office of Material Disposition – Washington, DC

Experience

- Research and Practice Associate, Institute for National Security and Counter Terrorism
- Research and Teaching Assistant, Syracuse University
- Research Assistant, Institute for Veterans and Military Families, Syracuse University

Accomplishments

- Completed dissertation work on the politics and negotiations involved in international agreement and treaty-making in “Treaty Purgatory: The Politics of U.S. Treaty Nonratification”
- In her project, “Nuclear Weapons Diplomacy: Do Small States have Leverage over their Great Power Allies?”, researched the interrelation between U.S. grand strategy and allies’ nuclear ambitions
- Participated in several workshops to cultivate the technical knowledge required to understand complex nuclear issues including the National Committee on North Korea’s “Knowing North Korea Workshop”; the Public Policy and Nuclear Threats Bootcamp at the Institute on Global Conflict and Cooperation; the Nuclear Nonproliferation, Safeguards, and Security in the 21st Century Course; and the Carnegie International Policy Scholars Consortium and Network
- Received the Center for European Studies and Andrew Berlin Family National Security research grants
- Analyzed federal tax expenditures in contribution to the book *Welfare for the Wealthy: Parties, Social Spending, and Inequality in the United States*
- Worked on a book chapter on the role of Soviet security services in the development of Soviet foreign policy
- Helped compile a database on international war crimes tribunals and truth commissions
- Intermediate language proficiency in French and Korean

Education

- PhD, Political Science, Syracuse University (anticipated 2020)
- Master of Public Administration, National and International Security, Syracuse University
- Certificate of Advanced Study, Security Studies, Syracuse University
- Bachelor of Arts, International Relations, McKendree University



Jessica Bateman

NA-81 Counterterrorism and Counterproliferation Office of Nuclear Incident Policy and Cooperation – Washington, DC

Experience

- Integration Intern, Office of Policy, U.S. Department of Homeland Security
- Web Editor, International Affairs Review, George Washington University
- Nuclear Security Intern, American Security Project
- Strategic Projects Intern, Bank Information Center
- Scheduler/Office Manager, Bill Bryant for Governor Campaign

Accomplishments

- While interning at the American Security Project, monitored developments in U.S. nuclear security policy and provided realistic policy recommendations and predictions for principal nuclear security issues through publications of several columns
- Published columns on the Nuclear Posture Review, Missile Defense, the Joint Comprehensive Plan of Action, Pakistan joining the Nuclear Suppliers Group, and future of the INF
- Supported the budget review process, winter study research, and budget project at the U.S. Department for Homeland Security

Class of 2019–2020

- Interned at the Bank Information Center, coordinating logistics and staffing large monthly meetings between various U.S. Government departments, civil society organizations, and nonprofits
- Completed various research projects on the U.S. strategy toward developing and fragile nations in the National Security Strategy, U.S. foreign policy, and key relationships and roles within the national security enterprise
- Wrote a capstone thesis titled “Nuclear Futures: The Effects of CPEC on India and Pakistan” and created trend analysis algorithm to track engagement to predict future trends in the region
- Intermediate proficiency in Spanish

Education

- Master of Arts, International Affairs, George Washington University
- Bachelor of Arts, Political Science, University of Oregon



Ryan Bolt

NA-20 Office of Defense Nuclear Nonproliferation Office of the Deputy Administrator – Washington, DC

Experience

- International Atomic Energy Agency (IAEA) Section Intern, U.S. State Department Mission to International Organizations in Vienna
- Graduate Research Assistant, James Martin Center for Nonproliferation Studies
- Intern, Government Accountability Office International Affairs and Trade Team
- Richard B. Russell Security Leadership Scholar, Center for International Trade and Security
- Student Export Control Analyst, TradeSecure LLC

Accomplishments

- Worked closely with the nuclear security attaché to the IAEA to provide research, analysis, and edits for U.S. proposals in preparation for multilateral negotiations on nuclear security
- Participated in bilateral and multilateral negotiations on the Nuclear Security Resolution ahead of the 2018 IAEA General Conference
- Supported the Nuclear Threat Initiative 2018 Global Incidents and Trafficking Database by researching and cataloging instances of radiological material falling out of regulatory control
- Created a threat assessment for the Port of Savannah against a hypothetical radiological attack through the Richard B. Russell Security Leadership Program
- Audited the Department of Defense Foreign Military Sales Program as an intern with the Government Accountability Office
- Cataloged export control and sanction developments for Fortune 500 companies trading in the Middle East and Asia as a student export control analyst at TradeSecure LLC
- Served as team captain and executive board member for the largest student-run undergraduate mock trial program in the country

Education

- Master of Arts, Nonproliferation and Terrorism Studies, Middlebury Institute of International Studies at Monterey
- Bachelor of Arts, International Affairs and Economics, University of Georgia



Blake Campbell

NA-242 Office of Nuclear Export Controls – Washington, DC

Experience

- Intelligence Analyst, BSI Supply Chain Services and Solutions
- International Threat Reduction Research Assistant, Los Alamos National Laboratory
- Accelerator Administrator, TradeSecure LLC
- Richard B. Russell Security Leadership Scholar, Center for International Trade and Security

BIOGRAPHIES

Accomplishments

- Traveled to Kuala Lumpur, Malaysia with experts from Los Alamos, Argonne, Sandia, and Pacific Northwest national laboratories to train Malaysian export control officials to build their capacity to conduct effective export license application reviews
- Worked with NNSA and national laboratory experts to ensure timely submission of annual Biological Weapons Convention Confidence Building Measures to the State Department ahead of schedule
- Review export license applications for WMD-related dual-use goods and technology for proliferation risks and attended interagency licensing dispute resolution meetings
- Worked as a team to develop a database for use by counterproliferation investigators
- Partnered with analysts to collect and analyze intelligence information to provide decision-makers with actionable intelligence
- Researched strategic trade control and related legislation to update and maintain the Accelerator Database, a comprehensive global export control database serving Fortune 500 companies
- Assisted the Center for International Trade and Security in executing its Security and Strategic Trade Management Academy, a globally recognized training forum that hosted 800 participants from 70 countries

Education

- Master of Arts, Security Studies, Georgetown University (anticipated 2020)
- Bachelor of Arts, International Affairs, University of Georgia

Celene Chavez

NA-SN Sandia Field Office – Albuquerque, NM

Experience

- Research Analyst, Nuclear Nonproliferation Monitoring and Analysis, Matthew B. Ridgway Center for International Security Studies
- Intern, Department of Public Safety, City of Pittsburgh
- Intern, World Affairs Council of Pittsburgh
- Outpatient Service Specialist, University of Utah Medical Center
- Million Veterans Program Research Assistant, Department of Veterans Affairs Medical Center
- Intern, Office of Diversity and Human Rights, Salt Lake City Mayor's Office

Accomplishments

- Pursued studies focused on global security within the regions of Latin America, South East Asia, and Europe; specifically, transnational organized crime, the spread of terrorism, and cybercrime, among other topics in modern security and intelligence
- Participated in a joint staff military game to analyze social media strategy used by international terrorists against the United States
- Completed master's capstone projects on the U.S. Intelligence Failure of the Unaccompanied Minor's Crisis of 2014, U.S. Foreign Policy in Central America, and the Human Failures of the Deepwater Horizon Crisis
- Completed interdisciplinary thesis on the strategic military shift of the United States from the Straits of Malacca to the South China Sea
- Coordinated a roundtable discussion for the Salt Lake City Mayor's Office, bringing together community and business leaders to ensure an open and honest discussion about possible immigration reform for the White House
- Member of Sigma Iota Rho Honors Society for International Studies

Education

- Master of Public and International Affairs, Security and Intelligence Studies, University of Pittsburgh
- Bachelor of Arts, International Studies, American University
- Certificate in International Nuclear Safeguards Policy and Information Analysis, Middlebury Institute of International Studies at Monterey
- Certificate in Intermediate French, L'Université de Paris-Sorbonne



Class of 2019–2020



Miguel Cortez

NA-SN Sandia Field Office – Albuquerque, NM

Experience

- Land Surveyor, Three C's Contracting
- Teaching Assistant, University of Texas at El Paso
- Project Manager, NASA Science, Engineering, Mathematics, and Aerospace Academy
- Fellow/Research Assistant, National Oceanic and Atmospheric Administration Atlantic Center for Atmospheric Sciences

Accomplishments

- Developed and designed new instrumentation to detect light scattering from small aerosol particles
- Experienced with high-energy physics, designing wave generators, and energy transducing crystals
- Spent three months at National Oceanic and Atmospheric Administration Atlantic Oceanographic Meteorological laboratory in Miami, Florida conducting data assimilation, analyzing the impact of data collected from inside a hurricane had on forecasting models
- Traveled to Argentina as part of a group of leading scientists from the United States, Brazil, and Argentina collaborating to form a joint effort between the countries to better understand climate variability in the Andes mountains
- Served as director for the local chapter of National Oceanic and Atmospheric Administration Center for Atmospheric Sciences Weather Camp

Education

- Master of Science, Physics, Electromagnetic Scattering, University of Texas at El Paso
- Bachelor of Science, Applied Physics, University of Texas at El Paso



Cesar Dominguez

NA-LA Los Alamos Field Office – Los Alamos, NM

Experience

- Graduate Research Assistant, Multi-material Additive Manufacturing, W.M. Keck Center for 3D Innovation
- Graduate Coordinator, Center for Education Research and Policy Studies, University of Texas at El Paso
- Undergraduate Research Assistant, NASA CubeSat, Center for Space Exploration and Technology Research
- Teacher Assistant, Mathematical Department, University of Texas at El Paso

Accomplishments

- Completed a graduate certificate in 3D engineering and additive manufacturing, a certificate of completion for the Lockheed Martin Systems Engineering Bootcamp, and a master's thesis on cradle-to-grave lifecycle process analysis for transuranic waste management with Los Alamos National Laboratory
- Participated in Preparedness for Post-Accident Recovery Process: Lessons from Experience at the University of Tokyo
- Presented at the Peer-Led Team Learning International Society on "Development of Cooperative Learning through Technology and Games" and the Southwest Emerging Technology Symposium on "Small-Scale Additive Manufacturing Robotic Arm Assembly for Integration into a Cubesat"
- Attended the University of Colorado Boulder 2017 Leadership Conference
- Conducted research in the field of additive manufacturing of polymers, ceramics, functionally graded materials, piezoelectrics, composites, and lattice structures
- Served as graduate coordinator for the Mathematical Department focused on transforming, developing, and integrating learning communities by implementation of cooperative learning and metacognitive strategies in the fields of STEM education
- Received first place in a Mechatronics competition for simplicity, functionality, and design in a city-wide contest
- Participated in a research project conducted by cSETR in conjunction with NASA for a robotic arm assembly for implementation within a cubeSAT
- Bilingual and proficient in both English and Spanish

Education

- Master of Science, Mechanical Engineering, University of Texas at El Paso (anticipated 2020)
- Bachelor of Science, Mechanical Engineering, University of Texas at El Paso

BIOGRAPHIES



Daniel Ellis

NA-LA Los Alamos Field Office – Los Alamos, NM

Experience

- Research Assistant, NASA/White Sands Test Facility Research, New Mexico State University
- Research Assistant, Carlsbad Environmental Monitoring Research Center
- Researcher, San Juan College

Accomplishments

- Researched processes involving soil and water remediation of radioactive materials
- Participated in a project developed by White Sand Test Facility to remove N-nitroso dimethylamine, a carcinogen that came about from the dumping of spacecraft fuel during the Apollo program and subsequent cleanup method using bleach that created the compound
- Participated in a project with Broken Hill Proprietary Company working with uranium mine tailings; used phytoremediation to remove uranium, radium, thorium, and other radioactive contaminants from the soil, by growing a bio-diesel-producing plant called Salicornia to remove the contaminants
- Coauthored a publication for the Virginia Military Institute's Journal of Undergraduate Chemistry Research
- Developed theoretical and technical expertise working with radioactive materials and taking courses to learn about governmental policies and policy making

Education

- Master of Science, Chemical Engineering, New Mexico State University (anticipated 2021)
- Bachelor of Science, Chemical Engineering, New Mexico State University

Arnold Eng

NA-APM-1.5 Los Alamos National Laboratory Project Management Office – Los Alamos, NM

Experience

- Masters Intern and Post-Bachelors Research Associate, PNNL
- Science and Technology Co-op, Arizona Chemical (subsidiary of Kraton Corporation)
- Undergraduate Researcher, School of Mechanical Engineering, Georgia Institute of Technology
- Summer Undergraduate Research Fellow, Purdue University
- Radiochemistry Fuel Cycle Fellow, University of Nevada

Accomplishments

- Participated in PNNL Safeguard Internship Program, working with several experts in nuclear safeguards and many different safeguard projects
- Advanced the analytical instrumentations and created innovative solutions to enhance sample processing in PNNL's Subsurface Science and Technology group
- Supervised engineering students to manufacture device upgrades and supported an international training course on nuclear safeguards
- Participated in the Georgia Tech Energy Club and helped initiate an annual energy-themed conference hosting the best innovators and policymakers in energy
- Revitalized a university chapter of the Institute of Nuclear Materials Management and worked with Purdue's chapter to hold the first Purdue Conference on Active Nonproliferation
- Participated in the Science Olympiad, mentoring a team of high school sophomores for a material science competition—the students won first place at regionals
- Coauthored a paper on a proof-of-concept thermoelectric device and completed an undergraduate thesis on developing high-performance thermoelectric polymers
- Completed a certification in nuclear engineering

Education

- Master of Science, Chemical Engineering, Purdue University
- Bachelor of Science, Chemical and Biomolecular Engineering, Georgia Institute of Technology



Class of 2019–2020



Jose Ali Espitia

NA-LL Livermore Field Office – Livermore, CA

Experience

- Research and Development Graduate Summer Intern, Sandia National Laboratories
- Graduate Researcher, Physics Department, University of Texas at El Paso
- Research Peer Mentor, Physics Department, University of Texas at El Paso
- Graduate Teaching Assistant, Physics Department, University of Texas at El Paso
- Undergraduate Research Assistant, Physics Department, University of Texas at El Paso

Accomplishments

- Member of the University of Texas at El Paso Nanomaterials, Interfaces, and Confinement for Energy and the Environment Laboratory
- Completed thesis on Hierarchical Structure of Nanoporous Carbon Electrode Materials Elucidated by Water Sorption: A Comparison of Multiple Structural Models, exploring carbide derived carbons for supercapacitors, a form of energy storage devices
- Interned in nanostructure physics at Sandia National Laboratories, using computational skills to analyze selected area electron diffraction patterns of irradiated materials using machine learning software
- Mentored an undergraduate summer intern from Universidad del Turabo, Puerto Rico participating in the Consortium for Integrating Energy Systems in Engineering and Science Education program, a DOE-sponsored project
- Conducted independent study on learning fundamentals of crystallography, equipment, and software to better assess unknown sample structures and atoms arrangement

Education

- PhD, Materials Science and Engineering, University of Texas at El Paso (anticipated 2021)
- Master of Science, Physics, University of Texas at El Paso
- Bachelor of Science, Physics, University of Texas at El Paso

Hilda Fontes

NA-NV Nevada Field Office – Las Vegas, NV

Experience

- Research Assistant, University of Texas at El Paso
- Teacher Assistant, University of Texas at El Paso
- Tutor, Dona Ana Community College

Accomplishments

- Synthesized polysiloxane and silica microspheres through a sol-gel process
- Developed paste extrusion printing process and acquired experience in freeze-form extrusion ceramic fabrication
- Graded homework, quizzes, and tests for 116 students during system dynamics classes
- Performed laboratory maintenance, including maintaining and cleaning equipment, ordering materials, and maintaining an inventory of laboratory supplies
- Assisted with preparing and conducting experiments and wrote and presented reports of perovskite solar cells synthesis
- Tutored English as a Second Language and GED students in English, mathematics, and sciences
- Helped 13 students obtain GED certificates and eight students to advance to college education
- Collaborated as Vice President of the Women Empowerment Organization
- Participated in the Society of Women Engineers and American Institute of Chemical Engineers
- Coauthored “Piezoelectric Optimization of BaTiO₃ Ceramics through Design of Experiments” (submitted and under revision) and on “Polysiloxane Microspheres as Pore Formers for Additive Manufacturing” (in preparation)

Education

- Master of Science, Mechanical Engineering, University of Texas at El Paso (anticipated 2020)
- Bachelor of Science, Chemical Engineering, New Mexico State University





Hannah Gardiner

NA-115 Office of Engineering and Technology Maturation – Washington, DC

Experience

- Graduate Research Assistant, Department of Nuclear Engineering, University of Florida
- Summer Research Associate, RAND Corporation
- Graduate Research Assistant, Pacific Northwest National Laboratory
- Undergraduate Research Assistant, Department of Physics, Louisiana State University

Accomplishments

- Experienced in physics and nuclear engineering with extensive knowledge of analytical and research skills at the intersection of nuclear science, national security, and policy
- Completed a thesis project in developing a non-destructive x-ray backscatter radiography platform to image soil and plant roots under field conditions
- Participated in the 2017 Nuclear Engineering Student Delegation, co-chaired the 2018 delegation, and chaired the 2019 delegation
- Completed a project focused on nuclear warfighting readiness for the U.S. Army, creating a model that estimates the medication needs and the prognosis for servicemen as a function of radiation dose, number of personnel, and time of exposure
- Designed and built two heavy ion chambers and operated and maintained other pieces of equipment and electronics, including vacuum pumps, preamps, and oscilloscopes
- Designed an improved ionization chamber as a part of the Neutron Spin Rotation collaboration using AutoCAD Inventor
- Managed a team tasked with designing and building a payload to collect information such as temperature, pressure, humidity, and video as a function of altitude via a weather balloon flight

Education

- PhD, Nuclear Engineering, University of Florida
- Master of Science, Nuclear Engineering, University of Florida
- Bachelor of Science, Physics, Louisiana State University



Alexander Godinez-Robinson

NA-23 Office of Material Management and Minimization – Washington, DC

Experience

- Program Coordinator, Rebuild North Bay Foundation
- Substitute Teacher, Travis Unified, Vacaville, and Fairfield-Suisun Unified School Districts
- Leadership Consultant, Core Camp, Norm Hull & Associates
- Program Manager, Chicano Latino Youth Leadership Project
- Intern, Regional Security Office, U.S. Embassy London, U.K.
- Director, Speakers Program, UCLA/UCD Summer Institutes, Junior State of America
- Congressional Intern, U.S. House of Representatives, Office of Congressman John Garamendi (CA-03)
- Intern, California State Senate, Office of the Majority Caucus

Accomplishments

- As an intern with the Regional Security Office at the U.S. Embassy in London, worked with the Acting Ambassador to mitigate threats and further U.S. interests in-country
- Interned with the U.S. House of Representatives, researching and formulating legislative policy positions on higher education, maritime security, and national defense
- Studied international and comparative politics abroad in Italy and Spain
- Conducted leadership development training for high school leadership students, including seminars on inclusive language, stress management, effective communication and collaboration, ethical leadership, and personality style profiles
- Published articles in the monthly California State Senate Office of the Majority Caucus Newsletter on marriage equality, the Affordable Care Act, censorship of social media, and making college affordable

Class of 2019–2020

Education

- Master of Arts, Security and Terrorism, University of Kent
- Master of Science, International Public Policy, University College London
- Bachelor of Arts, Political Science, University of California, Santa Barbara

Aimee Gonzalez

NA-50.1 Office of Safety Transformation – Albuquerque, NM

Experience

- Advanced Characterization and Processing Research Assistant, Savannah River National Laboratory Supplemental Instructor for Physics, University of Nevada, Las Vegas
- Nuclear Measurements Research Assistant, Savannah River National Laboratory
- Research Assistant, University of Nevada, Las Vegas

Accomplishments

- Worked on thesis developing an algorithm and prototype to detect transient neutron flux; presented progress at the 2019 University of Nevada, Las Vegas Graduate Poster Competition
- Interned at the Savannah River National Laboratory with the nuclear measurements and advanced characterization and processing groups
- Worked on multiple projects at the Savannah River National Laboratory, gaining exposure to the many functions of DOE, from nuclear concepts to national security topics, and engaged in seminars on technical topics and ongoing national and international projects
- Worked on the evaluation of radioactive chemical solutions accompanied by a written report; presented the work at the American Nuclear Society 2018 Annual Student Conference
- Developed theory and prototype of a single-propellered unmanned aerial system, which was funded by the Nevada NASA Space Grant; presented the work at the 2015 University of Nevada, Las Vegas Fall Undergraduate Research Showcase
- Experienced with C programming and use of Arduino microprocessors for instrumentation and control
- Fluent in Spanish, both reading and writing

Education

- Master of Science, Materials and Nuclear Engineering, University of Nevada, Las Vegas (in progress)
- Bachelor of Science, Mathematics, University of Nevada, Las Vegas

Miguel Gonzalez-Sierra

NA-APM-1.3 NA-APM Uranium Processing Facility Project Management Office – Oak Ridge, TN

Experience

- Research Intern, Engineer Research and Development Center, U.S. Army Corp of Engineers
- Assistant Project Manager, Caguas Mechanical Contractor
- Instructor, Metallurgical and Material Science Laboratory, University of Puerto Rico Mayagüez

Accomplishments

- Participated on multidisciplinary projects such as manufacturing process design, research on electromagnetic motors and structural concrete, and project management for pharmaceutical and medical device companies
- Supervised a brigade of 12 craft workers and led mechanical and civil works, such as HVAC systems installations and clean room construction
- Skilled in reading construction drawings and blueprints, performing field quality inspections of construction labor, and identifying continuous improvement opportunities
- Imparted the theoretical and practical concepts for destructive and non-destructive materials characterization, metallurgical processes, metallography, mechanical testing in the Metallurgical and Material Science Laboratory
- Interned with the U.S. Army Corp of Engineer's Engineer Research Development Center, researching ultra-high-performance concrete properties, a material used in military applications but also nationwide for buildings, bridges, and roads



- Mechanical engineer familiar with traditional civil engineering domains such as construction management and structural materials research
- Experienced with three major pharmaceutical companies working in project and construction management (civil/mechanical works)
- Improved efficiency and reduced downtime in injection molding manufacturing process by design and implementation of a new support plate that was performed using the 8-D methodology
- Strong CAD and FEA background for thermal and mechanical analysis using Solid Works, Siemens NX, COMSOL, ANSYS, and other software

Education

- Master in Engineering, Mechanical Engineering, University of Puerto Rico Mayagüez
- Bachelor of Science, Mechanical Engineering, University of Turabo

Taylor Hart-McGonigle

NA-211 Office of International Nuclear Security – Washington, DC

Experience

- Policy Intern, African Affairs, Office of the Secretary of Defense, U.S. Department of Defense
- Research Assistant, Moynihan Global Affairs Institute, Syracuse University
- Research Collaborator, Mentored Undergraduate Summer Experience Program
- Intern, 16 Days of Activism Against Gender-Based Violence Campaign, Center for Women's Global Leadership, Rutgers University
- Advocacy Intern, Providence House
- Arabic Oral Proficiency Hour Leader

Accomplishments

- Studied abroad with the International Institute for Counterterrorism and obtained an executive certificate in counterterrorism
- Conducted research on how fear of further nuclear weapons proliferation in the Middle East enters the security considerations of Middle Eastern countries
- Researched international security issues focused on the intersections and tradeoffs between national security and sovereignty through shiprider agreements and the Container Security Initiative
- Researched effects of neoliberal economic reform and structural adjustment policies on the conceptualization and management of water resources in the Chagga-speaking population at the base of Mount Kilimanjaro, Tanzania
- Assisted in the creation of the Take Action Kit for the campaign, including research on militarism, military expenditures, education spending, gender-based violence in refugee/internally displaced people camps, and barriers to education in conflict areas
- Proficient in Arabic and formatted and led an hour-long class specifically designed to enhance Arabic oral proficiency to work in conjunction with a faculty-led course

Education

- Master of Arts, International Relations, Syracuse University
- Master of Public Administration, Public Administration, Syracuse University
- Certificate of Advanced Study, Security Studies, Syracuse University
- Certificate of Advanced Study, Middle Eastern Affairs, Syracuse University
- Bachelor of Arts, International Studies, The College of New Jersey





Jared Hatch

NA-EA NNSA Office of Congressional Affairs – Washington, DC

Experience

- Intern, U.S. Department of State, Office of Public Engagement
- Intern, The Heritage Foundation, Young Leaders Program
- Intern, New York Public and International Affairs Office, The Church of Jesus Christ of Latter-day Saints

Accomplishments

- Worked for the U.S. Department of State in the Bureau of International Information Programs, connecting members of the Young African Leaders Initiative with U.S. policy
- Created digital content for the Young African Leaders Initiative's 500,000 network members including blog posts, surveys, marketing, emails, social media posts, in-person interviews, and online advertisements
- Interned for the Heritage Foundation in Washington DC and wrote about the sensitive issues of health care and human rights
- Planned, executed, and assisted in hosting events in New York City for over 300 people including ambassadors, consuls general, religious leaders, and their families
- Completed major projects in intergovernmental relations, communications, organizational behavior, project management, negotiations, data visualization, R-Studio, Excel, Google Suite, cost-benefit analysis, quantitative decision analysis, and program evaluation
- Proficient in Spanish and Portuguese

Education

- Master of Public Administration, Brigham Young University, Marriott School of Business
- Bachelor of Arts, Political Science, Brigham Young University-Idaho

Edward Hoegg

NA-MB-92 Office of Program Analysis and Evaluation – Washington, DC

Experience

- PhD Intern, Human Capital Development Program, PNNL
- Research Assistant, Chemistry, Clemson University
- Science Technology Policy Fellow, DOE Solar Technologies Program, Oak Ridge Institute for Science and Education
- Support Contractor to the DOE, Energetics Inc.

Accomplishments

- Conducted doctoral studies focused on mass spectrometer research and development for applications in the field of atomic spectrometry with a focus on nuclear safeguards and instruments that meet the IAEA's International Target Values for Measurement Uncertainties in Safeguarding Nuclear Materials; along with collaborators, holds the record for highest achieved resolution of an atomic mass spectrum
- Completed research leading to 10 first-author publications and numerous second author publications to date; invited lecturer at numerous conferences in the field of analytical chemistry and mass spectrometry
- Applied for a patent entitled "Multi-Electrode/Multi-Model Atmospheric Pressure Glow Discharge Plasma Ionization Device (No. 16/600.636)
- Awarded several honors during PhD studies including Federation for Analytical Chemistry and Spectroscopy Societies Student Award, Graduate Faculty Award and Chemistry Outreach Awards from the Department of Chemistry at Clemson University, and a certificate of merit by the Defense Threat Reduction Agency
- Served as technology manager for 11 awards, totaling \$15 million dollars, in the DOE's Concentrating Solar Power Program portfolio that focused on thermal storage and high-temperature corrosion and co-developed a Financial Opportunity Announcement entitled "Concentrating Solar Power: Efficiently Leveraging Equilibrium Mechanisms for Engineering New Thermochemical Storage"
- Awarded two certificates of appreciation presented by the DOE Solar Technologies Program for work completed as part of the SunShot Initiative

Education

- PhD, Chemistry, Clemson University
- Bachelor of Science, Chemistry, Washington College





Timothy Jacomb-Hood

NA-233 Office of Material Disposition – Aiken, SC

Experience

- PhD Intern, PNNL
- PhD Candidate, Texas A&M Radiation Detection Laboratory
- Teaching Assistant, Nuclear Engineering Department Texas A&M University
- Summer Intern, Lawrence Livermore National Laboratory
- Undergraduate Researcher, Penn State Intense Laser Laboratory

Accomplishments

- Awarded the Nuclear Forensics Undergraduate Scholarship and spent a summer at Lawrence Livermore National Laboratory working with nuclear fallout
- Awarded the Nuclear Forensics Graduate Fellowship and conducted graduate dissertation work at PNNL
- Completed doctoral research in spatially resolved HPGe gamma-ray spectroscopy for nuclear forensic analysis
- Completed graduate certificates in advanced international affairs and in nuclear security
- Set up and performed experiments using a laboratory alpha, beta, and gamma detection systems
- Managed the extended selection of mobile radioisotope identification systems used for demonstrations and field exercises
- Performed actinide separation chemistry to compare glassy fallout to natural soil
- Served on the organizing committee and worked on all planning stages for the Institute of Nuclear Materials Management Safeguards Culture Workshop that Texas A&M hosted in 2016

Education

- PhD, Nuclear Engineering, Texas A&M University (anticipated 2020)
- Bachelor of Science, Nuclear Engineering, Schreyer Honors College at The Pennsylvania State University

Rebecca Lewis

NA-22 Office of Defense Nuclear Nonproliferation Research and Development – Washington, DC

Experience

- Graduate Fellow, National Superconducting Cyclotron Laboratory, Michigan State University
- Visiting Researcher, Los Alamos Neutron Science Center, Los Alamos National Laboratory
- Teaching Assistant, Nuclear Chemistry Summer School, San Jose State University
- Research Assistant, Nuclear Medicine and Molecular Imaging Group, Massachusetts General Hospital
- Science Undergraduate Laboratory Intern, Isotope and Fuel Cycle Technology Group, Oak Ridge National Laboratory

Accomplishments

- Completed an NNSA-funded thesis project at the intersection of nuclear reactions, nuclear structure, and astrophysics focused on inferring neutron-capture cross sections of short-lived nuclei by combining experimental information and theory calculations
- Contributed to 20 National Superconducting Cyclotron Laboratory (NSCL) experiments ranging from assisting other experimenters to leading experimental preparation and coordinating internal and external research activities
- Worked with research staff at Los Alamos National Laboratory to investigate different modeling codes used for calculating neutron-capture cross sections to determine the impact of their uncertainties on reactions
- Supported the new Nuclear Medicine and Molecular Imaging Group at Massachusetts General Hospital, studying ways to make radiolabeling tracers for diagnosing Alzheimer's disease more efficient through the use of microfluidics and exploring the impact nuclear science can have on public health
- Served as NSCL tour guide, graduate outreach coordinator, and graduate student president; acted as interface between graduate students and laboratory management, led tours to over 1,000 visitors and ran labs during the summer to help inspire the next generation of scientists
- Served as Executive Secretariat for Professional Opportunities for Women at Energy Realized, the Employee Resource Group for women at DOE



Class of 2019–2020



Education

- PhD, Chemistry, Michigan State University
- Bachelor of Science, Chemistry, Northeastern University

Tyler Lo

NA-531 Office of Packaging and Transportation – Albuquerque, NM

Experience

- Programs Engineer Intern, NextEra Energy Inc., Point Beach Nuclear Power Plant
- Intern, Office of the U.S. Trade Representative

Accomplishments

- Interned at the Point Beach Nuclear Power Plant in Programs Engineering, focused on monitoring the in-service testing for relief valves and designing a manual for testing the reactor head during maintenance
- Conducted nuclear engineering research with multiple nuclear simulation software programs to measure and run simulations of radiation interactions with different materials and to evaluate the shielding capabilities in different clothing material
- Interned in the Europe and Middle East department at the Office of the U.S. Trade Representative in Washington DC, analyzing technical standards to determine their impacts on American products and then discussed potential hindrances foreign regulations would have on the American products
- Designed, tested, and built a seed planter for an Introduction to Mechanical Engineering Design course that was selected in the top eight best design projects
- Served as President of Iowa State University Student Section of the American Nuclear Society and member of the National Society of Leadership and Success, Sigma Alpha Pi

Education

- Master of Engineering, Nuclear Engineering, Texas A&M University
- Bachelor of Arts, Mechanical Engineering, Iowa State University

Haylie Lobeck

NA-192 Office of Tritium and Domestic Uranium Enrichment – Albuquerque, NM

Experience

- NNSA Actinide Center of Excellence Graduate Student Intern, Sandia National Laboratory
- Graduate Research Assistant, University of Notre Dame
- Teaching Assistant, Geochemistry and Computational Methods, Notre Dame
- Undergraduate Laboratory Assistant, Arcadia University

Accomplishments

- Completed dissertation research on solution and solid behaviors of uranyl peroxide species with potential applications in the nuclear fuel cycle, including reprocessing spent fuel and in situ uranium leaching mining operations
- Assisted in the development of an *in situ* Raman spectroscopy system used to probe the solution chemistry of uranyl peroxide species in water up to 180°C
- Design and completed projects in dissolving uranium metal in alkaline-peroxide-rich solutions, developing and testing electrochemical sensor for uranyl peroxide complexes in solutions, and employing a powerful Raman spectrometer to detect uranyl peroxide species in low-concentration systems
- Invited to be a guest speaker on the Young Investigators in Radiochemistry National Analytical Management Program webinar series
- Participated as graduate student representative in the DOE Frontier Research Center Early Career Network and Notre Dame Comprehensive Sustainability Strategy - Communications Small Working Group

Education

- PhD, Actinide Chemistry and Mineralogy, University of Notre Dame
- Bachelor of Science, Chemistry, Arcadia University





Diego Lozano Jimenez

NA-531 Office of Packaging and Transportation – Albuquerque, NM

Experience

- Intern, Air Force Research Laboratory (AFRL) Scholars Program
- Fellow, AFRL Summer Faculty Fellowship Program
- Masters Research Assistant, University of Texas at El Paso

Accomplishments

- Interned as a graduate research assistant for the AFRL Summer Faculty Fellowship Program exploring the effect of atmospheric turbulence in the field of directed energy and laser systems
- Constructed a numerical simulation of long-distance laser propagation under atmospheric turbulence through the Kolmogorov and non-Kolmogorov models
- Characterized the effects of laser beam propagation through a long atmospheric path through the phase fluctuations at the receiver plane
- Researched machine learning at the Air Force Maui Optical and Supercomputing site
- Applied deep neural networks on complex algorithms to accelerate a numerical simulation of long-range laser propagation
- Attempted to implement a conditional Generative Adversarial Network to learn phase unwrapping
- Studied the impact of strong atmospheric turbulence in spatial, temporal, and related spectral domains using Large Eddy Simulation turbulence modeling
- Implemented Computational Fluid Dynamics in Adaptive Optics to predict tropospheric parameters in turbulent media through computationally derived temperature profiles
- Awarded the Margaret Jean Abernethy Scholarship for two consecutive years
- Authored “Investigating metrics based on Phase variance for atmospheric turbulence effects on a 10km Laser beam propagation path” at the Advanced Maui Optical and Space Surveillance Technologies Conference and “Characterization of laser propagation over a long path through atmospheric turbulence” in the SPIE Proceedings Vol. 10637

Education

- Master of Science, Mechanical Engineering, University of Texas at El Paso
- Bachelor of Science, Mechanical Engineering, University of Texas at Austin

Zachary Matheson

NA-114 Office of Advanced Simulation and Computing – Washington, DC

Experience

- Graduate Research Assistant, National Superconducting Cyclotron Laboratory (NSCL), Michigan State University
- Graduate Student Research Intern, DOE Office of Science, Lawrence Livermore National Laboratory
- Undergraduate Research Assistant, University of Utah

Accomplishments

- Applied nuclear physics knowledge to modeling and simulation of spontaneous fission yields for several nuclei of interest to nuclear physicists and astrophysicists
- Developed components for theoretical nuclear fission calculations at high-temperatures and worked collaboratively to develop a standardized package for sharing theoretical nuclear fission data
- Used high-performance computing resources at Lawrence Livermore and Oak Ridge national laboratories to perform sophisticated nuclear fission simulations
- Coauthored four peer-reviewed articles and presented research at six workshops and national and international conferences
- As an NSCL Graduate Student Organization President, organized weekly research seminars for graduate students; as Recruitment Chair, organized events and meals for prospective new graduate students during the department’s annual recruitment weekend
- While working at the NSCL, gained experience with outreach and advocacy, including visiting congressional offices, writing letters, and giving scientific demonstrations
- DOE Office of Science Graduate Student Research awardee



Class of 2019–2020



Education

- Dual PhD, Nuclear Physics and Computational Math, Science, and Engineering, Michigan State University
- Bachelor of Science, Mathematics and Physics, University of Utah

Alexander Moe

NA-21 Office of Global Material Security – Washington, DC

Experience

- Office of Emerging Security Challenges Intern, Bureau of Arms Control and Verification, U.S. Department of State
- Congressional Intern, Congressman Kurt Schrader
- Intern, Office of Multilateral Nuclear and Security Affairs, U.S. Department of State
- Operations and Marketing Intern, Shephard Kaplan, LLC
- Janes Defense, Defense Budget Analysis Intern, Information Handling Services Inc.

Accomplishments

- Worked in the U.S. Department of State Arms Control, Verification, and Compliance Bureau in the Emerging Security Challenges office focused on space and missile defense issues and the current missile defense review process and U.S. national security policy for space
- Interned at the U.S. Department of State Multilateral Nuclear and Security Affairs (MNSA) Office of the International Security and Nonproliferation Bureau
- Coordinated talking points for the Acting Assistant Secretary's meetings on nonproliferation topics, provided research and administrative support on IAEA safeguards and the Additional Protocol (AP), and planned a conference for the 50th anniversary of the Treaty on the Non-Proliferation of Nuclear Weapons part in interagency meetings with MNSA and NNSA on the AP
- Briefed congressional staffers and members on key appropriation and armed services votes during the 115th Congress and was the designated lead for all nuclear weapon No First Use in the office and the Oregon House of Representatives delegation
- Attended House and Senate Armed Services and Foreign Affairs committee hearings on No First Use, nuclear briefings, and events around Washington DC, and papers published by third-party groups
- Completed dissertation on "Civil Preparedness for a Ballistic Missile Nuclear Strike," focused on the nexus of state and federal emergency management and preparedness with the military establishment on the west coast of the U.S.

Education

- Master of Arts, Security Policy Studies, George Washington University
- Bachelor of Arts, Economics, Boston University
- Bachelor of Arts, International Relations, Boston University



Amber Morgan

NA-24 Office International Nuclear Safeguards – Washington, DC

Experience

- Intern, Office of the Deputy Director General, Department of Management, IAEA
- Intern, Arms Control and IAEA Sections, U.S. Mission to International Organizations in Vienna (UNVIE)
- Graduate Research Assistant, Export Control and Nonproliferation Program, James Martin Center for Nonproliferation Studies
- Intern, International Defense Acquisition Resource Management Program, Center for Civil Military Relations
- Student Associate, Project on Managing the Atom, Harvard Belfer Center for Science and International Affairs
- Richard B. Russell Security Leadership Scholar, Center for International Trade and Security

Accomplishments

- Worked with foreign delegations and international organizations to advance U.S. priorities while at UNVIE
- Organized a biannual P5 technical expert meeting on nuclear testing in Vienna
- Worked with UNVIE Arms Control Counselor to advance U.S. interests at CTBTO Preparatory Commission and corresponding working groups

BIOGRAPHIES

- Worked with UNVIE Nuclear Security Attaché to advance U.S. interests in multilateral negotiations for the 2018 IAEA Nuclear Security Resolution
- Contributed to upgrading radiation portal monitor maintenance processes at IAEA headquarters
- Evaluated various national export control systems and enforcement capabilities for the U.S. Department of State
- Built database of over 150 nuclear and missile-related U.S. export control violations
- Completed Nuclear Research Reactor Practicum with a VR-1 nuclear research reactor at Czech Technical University
- Participated in NNSA-sponsored Japan Nuclear Facilities Experience
- Received scholarship awards from Women in Defense and National Council on International Trade Development

Education

- Master of Arts, Nonproliferation and Terrorism Studies, Middlebury Institute of International Studies at Monterey
- Bachelor of Arts, International Affairs, University of Georgia
- Bachelor of Arts, Political Science, University of Georgia

Willa Nathan

Defense Threat Reduction Agency, Cooperative Threat Reduction, Global Nuclear Security Program – Fort Belvoir, VA

Experience

- Political Affairs Intern, Science, Technology and International Security Unit (formerly the Strategic Planning Unit), UN Office for Disarmament Affairs
- Graduate Research Assistant, James Martin Center for Nonproliferation Studies
- Intern, Center for Civil Military Relations in the Africa Program, Naval Postgraduate School
- Team Leader, Army War College Joint Exercise, Head of Delegation for Japan
- Intern, FTI Consulting

Accomplishments

- Studied abroad at the School of Oriental and African Studies with the University of London, with a focus on Middle East and Arabic studies
- Produced technical briefs on emerging technologies related to disarmament and nonproliferation including lethal autonomous weapons systems and military drone swarming
- Supported the Export Control Nonproliferation Program at the James Martin Center for Nonproliferation Studies and conducted open-source research for a program combating small arms and nuclear smuggling
- Supported curriculum development and delivery to aid the development of foreign security infrastructure, security capacity building, and maritime security
- Led, designed, and executed the negotiation strategy for Team Japan of the Army War College Joint Exercise
- As an intern for FTI Consulting, supported the Corporate Property Strategic Communications and Financial Strategic Communications Department and cultivated press lists for clients to enhance coverage opportunities during BREXIT
- Served as the head of finance, overseeing 10 members, and managed UNIS-UN conference budgets for annual issue-oriented global conferences in the UN's General Assembly Hall for 700 students from all around the world

Education

- Master of Arts, Nonproliferation and Terrorism Studies with a Financial Crime Management Specialization, Middlebury Institute of International Studies
- Bachelor of Arts, Philosophy, Boston College





Daniel Niez

NA-10 Office of Defense Programs, Deputy Administrator's Action Group – Washington, DC

Experience

- English Teacher/Auxiliar de Conversación, Spanish Ministry of Education
- Account Executive, Evolution Strategies
- Research Lead, Arrived
- Public Statements Research Intern, Vote Smart
- Research Assistant, University of Virginia Department of Politics Experimental Laboratory
- Congressional Intern, Office of Representative Gerry Connolly

Accomplishments

- Received a postgraduate fellowship from the Spanish Ministry of Education, teaching English as a Second Language in a primary school in Mallorca, Spain
- Coordinated a recruitment process for interviewing, accepting, and training research interns for Arrived, an immigration startup app seeking to empower and educate immigrants to the United States
- Managed an intern team, establishing and supervising their work schedule on a daily research blog, read by over 2,500 people, on immigration-related current events and the implications for new immigrants
- Completed a capstone Applied Policy Project, “Decreasing Medication-Assisted Treatment Need for the Uninsured,” working for the Region 10 Community Services Board of Virginia to estimate the unmet treatment need for opioid use disorder in central Virginia and recommend policy options to best reduce the unmet treatment gap
- Tracked over 3,300 public statements of numerous politicians for a national non-profit dedicated to voter education and integrated the data into the Vote Smart database
- Interned for Congressman Gerry Connolly, honing strategic communication skills while engaging with the Congressman's constituents in person and via telephone and email regarding the merits and concerns of recent legislation

Education

- Master of Public Policy, University of Virginia
- Bachelor of Arts, Foreign Affairs, University of Virginia

Caitlin O’Grady

NA-125.1 B61-12 Life Extension Program – Albuquerque, NM

Experience

- Research and Development Graduate Student Intern, Sandia National Laboratories
- Research Assistant, Purdue University
- Research Assistant, American Nuclear Society
- Teaching Assistant, University of New Mexico
- Governor’s Internship Program Energy, Minerals and Natural Resources Department

Accomplishments

- Interned at Sandia National Laboratories, conducting advanced research into improving energetic material performance; served as team lead on project development/design of energetic material laboratory experiments
- Completed a Master of Science thesis, “Micro-Sandwich Test of Vapor-Deposited Hexanitroazobenzene,” published in *Propellants, Explosives, Pyrotechnics*, a peer-reviewed journal
- Inducted into the Golden Key International Honor Society and the Tau Beta Pi National Honor Society
- Served as team manager for compiling educational materials and research published in the American Nuclear Society's publication of elementary, middle school, and high school teaching modules; presented at the American Nuclear Society Conference
- Worked with the State of New Mexico’s Energy, Minerals, and Natural Resources Department to complete research into the nuclear industry and interview leading experts of the nuclear field in New Mexico



Education

- PhD, Materials Science Engineering, Purdue University (anticipated December 2021)
- Master of Science, Mechanical Engineering, University of New Mexico
- Bachelor of Science, Nuclear Engineering, University of New Mexico

Nic Pilley

NA-195 Lithium Production Modernization Office – Washington, DC

Experience

- Quality Control Manager, Clark Construction LLC
- NATO Leadership Advisor, U.S. Army
- Engineer Company Commander, U.S. Army
- Civil Military Team Leader, U.S. Army Special Forces
- Engineer Construction Officer, U.S. Army

Accomplishments

- Served as a Combat Engineer Officer on active duty in the U.S. Army leading teams of 30, 120, and 200-plus soldiers over a 10-year career supporting both domestic and international contingency operations
- Served as one of two U.S. Military Mentors on a 65-person NATO Advisory team comprising senior military leaders from the United Kingdom, Germany, Finland, Croatia, Denmark, Romania, Turkey, Australia, and New Zealand
- Tasked with mentorship spanning multiple organizations focused on the Afghan Army's leadership development programs charged with the on-time development and delivery of 20 different course programs over a 12-month period
- Administered the training and development of Initial Entry Trainees leading to the training of over 700 new U.S. Army Combat Engineers and Bridge Crewmen Soldiers in a diverse, fast-paced, and taxing environment
- Independently cultivated partnerships with numerous local and international nonprofits, other international agencies, non-governmental organizations, the U.S. Department of State, and U.S. Agency for International Development on over 50 local outreach and development projects
- Administered project management for the simultaneous construction, support operations, and maintenance activities of over 200 civil construction projects over a 12-month period
- Attended the Defense Language Institute satellite school in Washington DC and obtained fluency in Afghani - Pashto

Education

- Master of Arts, International Security, George Mason University (in progress)
- Master of Science, Engineering Management, The University of Missouri Science and Technology
- Bachelor of Arts, Political Science, North Carolina State University

Annelise Plooster

NA-232 Office of Nuclear Material Removal – Washington, DC

Experience

- Graduate Research Assistant, Weapons Programs, Los Alamos National Laboratory
- Graduate Research Assistant, James Martin Center for Nonproliferation Studies
- Research Intern, Project on Nuclear Issues at the Center for Strategic and International Studies
- Senior Advisor to the Chief of Staff, U.S. Small Business Administration
- Special Assistant to the Deputy Secretary of Energy, DOE
- AmeriCorps VISTA, Division of Criminal & Juvenile Justice Planning, Iowa

Accomplishments

- Received research grant through the Middlebury Institute's Graduate Initiative in Russian Studies, funded by Carnegie Corporation of New York, to research in Russia and explore ongoing U.S.-Russian academic, scientific, and technology cooperation
- Aided in the launch of the Young Women in Nonproliferation Initiative at Center for Nonproliferation Studies
- Selected for the Dr. G. Robert Keepin Nonproliferation Science Summer Program



Class of 2019–2020

- Launched and directed a public-private partnership with 20-plus tech industry leaders and Fortune 500 companies to bring modern technology, cyber training, and digital tools to entrepreneurs
- As Special Assistant to the Deputy Secretary of Energy, became familiar with the mission of the NNSA, particularly as it pertained to stockpile stewardship and nonproliferation
- Spent two years at DOE, collaborating with U.S. national laboratories and traveling to 17 countries on official delegations, including to the Fukushima Daiichi nuclear power plant in Japan
- Served as the Small Business Administration agency lead on the White House Council on Climate Preparedness and Resilience and Trans-Pacific Partnership trade outreach, and agency co-lead on the White House Council on Women and Girls STEM Chapter

Education

- Master of Arts, Nonproliferation and Terrorism Studies, Middlebury Institute of International Studies
- Master of Arts, International Relations, Moscow State Institute of International Relations
- Bachelor of Arts, Political Science and International Studies, University of Iowa

Miguel Richardson

NA-LL Livermore Field Office – Livermore, CA

Experience

- Researcher, Florida A&M University
- Intern, Pacific Northwest National Laboratory
- Research Assistant, Python Programming Workshops
- Tutor, Navy Reserves' Offices Training Corps
- Process Engineer and Chemist, Procter and Gamble

Accomplishments

- Participated in a programming competition at a previous Extreme Science and Engineering Discovery conference, building a model to simulate the interaction of a population of people interacting with a population of mosquitoes infected with malaria
- Conducted experiments using light-induced breakdown spectroscopy, studying enhancements on spectrum from introduction of nanoparticles into samples
- Developed an algorithm to make real-time measurements on a power system
- Coordinate experiment design, setup, data collection, and analysis and Plasma Physics Diagnostic calibration and design for Python Programming Workshops
- Had a role in chemical formulation and designing new formulas for the Gillette Brand

Education

- PhD, Physics, Florida A&M University (anticipated 2020)
- Bachelor of Science, Physics, Florida A&M University

Samuel Rising

NA-242 Office of Nuclear Export Controls – Washington, DC

Experience

- Graduate Research Assistant, Center for International Strategy, Technology, and Policy, Georgia Institute of Technology
- Cybersecurity Summer Associate, RSM LLC
- U.S. Student Representative, Graduate Institute of International and Development Studies
- Enterprise Risk Management Intern, Global Payments Inc.

Accomplishments

- Performed graduate research grounded in big data analytics, social network analysis, visualization programs, modeling and simulation software, and scenario building to study the nuclear security space
- Served as the lead graduate research associate for the RuBase Project, an exploratory effort between Georgia Tech, the GT Research Institute, and the Hague Center for Strategic Studies; used machine learning, data mining, visual analytics, and social network analysis to create an interactive database to better understand the multi-dimensionality of foreign policy behavior



BIOGRAPHIES

- Served as the research assistant to Dr. Elizabeth Sherwood-Randall, the former U.S. Deputy Secretary of Energy, crafting an independent research project using social network analysis to quantitatively and qualitatively assess the United States' changing role in the commercial nuclear energy market
- Conducted security and privacy risk assessments and crafted formal cybersecurity policies and procedures to bring clients in line with federal information security frameworks and policies
- Selected as the U.S. student representative for a student consulting program assessing the effectiveness of current UN policy initiatives in arms control
- Partnered with a KPMG risk consulting group to analyze the risk management and compliance processes of a Fortune 200 credit processing company

Education

- Master of Science, International Affairs, Georgia Institute of Technology
- Bachelor of Arts, History, University of Mississippi

Gabriel Sandler

NA-1.3 Office of Cost Estimating and Program Evaluation – Washington, DC

Experience

- Graduate Research Assistant, University of Florida Nuclear Engineering Program
- Christine Mirzayan Science and Technology Policy Graduate Fellow, Committee on International Security and Arms Control at the National Academies of Sciences
- Research Assistant, Sandia National Laboratories
- Undergraduate Research Assistant, Nuclear Engineering Program, University of Florida

Accomplishments

- Conducted independent research on the characterization of liquid scintillators, X-ray backscatter radiography, and atmospheric transport modeling of radioactive material
- Completed senior design project examining the profitability of constructing a high-temperature gas-cooled power reactor
- Created background reports on the legislative and budgetary changes to the Cooperative Threat Reduction Program in preparation for the 2017 symposium
- Executed simulations to observe the effect of neutron energy on the efficiency and specific detector ratios of a ³He multiplicity detector
- Attended the Washington Nuclear Engineering Student Delegation, Next-Generation Safeguards Initiative Short Course, and export control and radiation safety training
- Attended Senate and House Armed Services Committee hearings on nuclear security matters

Education

- PhD, Nuclear Engineering, University of Florida
- Master of Science, Nuclear Engineering, University of Florida
- Bachelor of Science, Nuclear Engineering, University of Florida

Anthony Santo Domingo

NA-NV Nevada Field Office – Las Vegas, NV

Experience

- System Engineer, Nevada National Security Site, Mission Support and Test Services LLC
- Mechanical Engineer, Vulnerability Assessment Team, Professional Analysis Inc.
- Research Assistant, Nuclear Science and Technology Division, Harry Reid Center for Environmental Studies
- Intern, Center for Advanced Energy Studies, Idaho National Laboratory

Accomplishments

- Obtained a System Engineering Fundamentals Qualification at Nevada National Security Site
- Obtained certification in nuclear criticality safety engineering and nuclear safeguards and security



Class of 2019–2020

- Designed and built a precision measurement device for measuring irradiated zirconium-alloys to study shadow corrosion phenomena observed in boiling water reactors
- Assisted in developing a scanning alpha particle spectrometer and a neutron fission chamber as a research assistant at the Harry Reid Center for Environmental Studies
- Worked with the Nevada National Security Site Vulnerability Assessment Team, learning about security challenges for unique national-level experiments in nuclear facilities
- Presented at The Minerals, Metals, and Materials Society Annual Meeting and Exhibition Symposium on the topic of Micro-Displacement Measurements for Small Samples in the Advanced Test Reactor National Scientific User Facility

Education

- Master of Science, Material Science and Nuclear Engineering, University of Nevada, Las Vegas
- Bachelor of Science, Mechanical Engineering, University of Nevada, Las Vegas

Sydney Shuk

NA-NV Nevada Field Office – Las Vegas, NV

Experience

- Undergraduate Research Assistant, Spindler Laboratory
- STEM Intern, U.S. Department of Homeland Security
- ORISE Student Intern, Centers for Disease Control and Prevention
- Teaching Assistant, Emory University

Accomplishments

- Collaborated with the Counterterrorism Operations Support cohort to develop and refine five courses designed to train first responders globally on methods to respond to radiological emergencies
- Created a case report on two cases of radiological contamination for a course developed to train responders on non-traditional dispersal devices and contamination control
- Trained first responders from 30-plus jurisdictions in a basic hazard materials course to allow responders to manage a radiological crisis before federal agents intervene
- Analyzed trends of time, location, and medical outcomes from calls made to poison control centers regarding exposures to ionizing radiation and non-ionizing radiation over six years using data from the National Poison Data System
- As President of the University of Michigan Polish Student Association, planned weekly cultural and non-cultural events for 40-plus members and organized a charity ball with 250-plus attendees to raise over \$2,000 for Meals on Wheels Ann Arbor Chapter
- Participated on the Emory Student Outbreak Response Team, coordinating with professionals from the medical and nursing community to develop a day-long, hands-on experience in response methods to chemical and radiological emergencies for 60 public health and nursing students

Education

- Master of Public Health, Epidemiology, Emory University
- Bachelor of Science, Microbiology, University of Michigan

Cory Smith

NA-212 Office of Radiological Security – Washington, DC

Experience

- Program Assistant, Foreign Service Institute, U.S. Department of State
- Intern, Near East Affairs Bureau, U.S. Department of State
- Intern, European and Eurasian Affairs Bureau, U.S. Department of State
- English Education Volunteer, Peace Corps, Baku, Azerbaijan

Accomplishments

- Served as Program Assistant in the Foreign Service Institute Transition Center, preparing Foreign Service Officers, Ambassadors, and other U.S. government staff and their families for the day-to-day challenges of living abroad
- Awarded certificate of appreciation for outstanding performance facilitating official representational training for Ambassadors' spouses at the Foreign Service Institute



- Developed a graduate capstone project to quantify violent extremist incidents within the framework of political repression/ democratization; led a mixed international team of student researchers that produced data and a report for the U.S. Department of State's Global Engagement Center and its countering violent extremism mission
- Drafted documents contributing to a Government Accountability Office report, cables, and memoranda on expected policy changes from pending legislation, and guidelines for student exchange programs administered by the Near East Affairs Bureau
- Awarded certificate of appreciation for outstanding support for the European and Eurasian Affairs Bureau, supporting public diplomacy programming and meeting frequently with interagency partners and the Counterterrorism Bureau to coordinate campaigns to counter terrorist propaganda
- Served as Peace Corps English Education Volunteer in a public school in the town of Imishli, Azerbaijan; demonstrated interactive teaching methods to local teachers, improving the quality of English education offered by local schools
- Administered several grant-supported Peace Corps projects, including youth sports clubs, a boys' leadership summer camp, and a youth film festival

Education

- Master of Arts, International Affairs, George Washington University
- Bachelor of Arts, Political Science/Islamic Studies, University of Michigan

Jana Starks

NA-125.4 W87-1 Modification Program Office – Albuquerque, NM

Experience

- Graduate Research Assistant, University of Tennessee
- Undergraduate Research Assistant, Colorado School of Mines
- South Carolina Universities Research and Education Foundation Nuclear Forensics Undergraduate Scholar, Savannah River National Laboratory

Accomplishments

- Excelled in developing methods to record near infrared and ultra-violet-visible spectra from a plasma torch to support nuclear forensics research and development
- Assisted multiple projects ranging from application of neural networks to other spectroscopic applications and developing a method to use a femtosecond laser to perform online assay measurement of centrifuge enrichment cascades
- Collected optical emission spectra in UV-NIR wavelengths and deployed artificial intelligence to classify dusty plasma spectra
- Prepared cerium oxide samples for plutonium oxide surrogate and used FESEM for imaging
- Prepared research papers with scientific journal formatting and gave formal presentation to federal funders, laboratory staff, and university faculty
- Used OLI electrolyte simulation software to model processes involved in recovery of target material
- Awarded the Tickle College of Engineering and Spectra Tech Graduate Fellowships

Education

- Master of Science, Nuclear Engineering, University of Tennessee
- Bachelor of Science, Chemistry, Colorado School of Mines





Erica Symonds

NA-24 Office of Nonproliferation and Arms Control – Washington, DC

Experience

- Graduate Research Assistant, Center for International and Security Studies at Maryland
- Research Assistant, Nuclear Security Working Group
- Aeronautics and Cross Agency Support Division Intern, NASA Office of International and Interagency Relations
- Office of Emerging Security Challenges Intern, U.S. Department of State Arms Control, Verification, and Compliance Bureau
- Research Associate, Information Management Services Inc.
- Intern, Office of U.S. Senator Ben Cardin, Office of State Representative Jon Richards

Accomplishments

- Gained first-hand experience with arms control agreements, bilateral and multilateral cooperation, and specialized verification and compliance matters at the State Department
- Drafted and coordinated approval of international agreements through collaboration with NASA scientists, project offices, and foreign partners
- Completed a capstone project comparing and contrasting space and cyber governance in U.S. policy and multilateral forums over the past decade
- Researched nuclear security implications of constellations of small satellites with a focus on early warning satellites and remote sensing technology
- Participated in a Japan study abroad program focused on disaster resilience and recovery, producing a policy brief about “radiophobia” related to the Fukushima nuclear accident
- Worked at a boutique political research firm in Washington, DC, honing analytical and communication skills in a fast-paced environment

Education

- Master of Public Policy, University of Maryland
- Bachelor of Arts, International Studies and Political Science, University of Wisconsin-Madison
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Brandon Thompson

NA-191 Plutonium Program Office – Washington, DC

Experience

- Account Executive, Commercial Division, Dell Inc. | EMC
- Technical Sales Manager, Sales Support Advisor, and Technical Sales Representative, Advanced Systems Group, Dell Inc.
- Direct Sales, Commercial Division, Dell Inc.

Accomplishments

- Eleven years of experience in sales, management, and corporate training at a Fortune 50 tech firm
- Graduate education in international security and energy policy
- Managed matrix team that included sales, support, and customer services across all lines of business of various groups at Dell Inc.
- Presented, demonstrated, and white-boarded data center design practices in plain English to stakeholders of varying technical backgrounds
- Managed data center hardware specialists (with an overall plan of \$30 million quarterly)
- Administered and designed a learning and development program for enterprise specialists

Education

- Master of International Affairs, International Security Policy, Columbia University
- Bachelor of Science, Accounting, Auburn University



Bryant Vande Kolk

NA-113 Office of Experimental Sciences – Washington, DC

Experience

- Graduate Researcher, University of Notre Dame
- President, Co-Vice President, Quality of Life Chair, Physics Department Representative, Graduate Student Union, University of Notre Dame
- Lab Administrator Teaching Assistant, University of Notre Dame
- Research Experience for Undergraduates Researcher, University of South Florida

Accomplishments

- Demonstrated experimental nuclear astrophysics research over seven years at the collaborative Nuclear Science Laboratory at Notre Dame
- Led multiple organizations, implementing policies to advance the well-being of graduate students and to promote the goals of the organizations
- Installed nuclear accelerator beam lines, target chambers, and detector stands, and operated two multi-million-volt accelerators and dissertation experiment and collaborations at the Nuclear Science Laboratory
- Developed analytical code for research data and 17 detectors over 20 unique proton beam energies to determine and improve cross-section values of the nuclear reaction specific to dissertation
- Worked with the Notre Dame University Health Services, Graduate Student Life, and the Graduate Student Union healthcare chair to communicate health plan changes to graduate students and to promote two major resources—The Shirt Charity Fund and the Family Resource Center—for students in financial medical need
- Partnered with the Graduate School to develop a financial literacy workshop series to educate students on finances
- Chaired the Conference Presentation Grant review committee, granting dozens of graduate students up to \$500 each to present their research results at conferences

Education

- Master of Science, Physics, University of Notre Dame
- Bachelor of Arts, Physics, Ripon College

Erica Wolf

NA-213 Office of Nuclear Smuggling Detection and Deterrence – Washington, DC

Experience

- Project Manager, Transformation Task Force, Cape Fox Facilities Shared Services, U.S. Agency for International Development (USAID)
- Management Analyst/Deputy Coordinator, Cape Fox Facilities Shared Services, USAID
- Special Assistant to the Chief Human Capital Officer, YRCI, Inc., USAID
- Administrative Management Officer, Social Solutions/CAMRIS International, USAID
- Program Associate, Institutional Business Development Department, Heifer International
- Personnel Psychology Technician/Research Assistant, Work Life Wellness Division, U.S. Office of Personnel Management
- Project Coordinator, Ray Group International, U.S. Department of Veterans Affairs

Accomplishments

- Led a Community of Stakeholders on Leadership and Accountability to develop the first-ever USAID Leadership Philosophy
- Co-hosted counselor consultations with 48 Mission Directors and 17 Deputy Mission Directors from USAID missions around the world
- Co-created USAID's Development Diplomat in Residence program under the direction of the Chief Human Capital Officer
- Conducted Institutional Business Development Training for Heifer International country teams in the Africa region
- Monitored U.S. Government's foreign policy objectives and development programs for infrastructure and agriculture projects
- Interned for the Senate Committee on Foreign Relations and the Department of State at the U.S. Consulate in Strasbourg, France



Class of 2019–2020

- Held research, administrative, and programmatic roles at Creative Associates International, Heifer International, and the USAID
- Researched and co-wrote the first-ever Telework Report to Congress as mandated by the Telework Act of 2010

Education

- Master of Arts, Political Science, Howard University
- Master of Arts, Public Administration, American University
- Bachelor of Arts, Political Science, Howard University

Sidra Zia

NA-212 Office of Radiological Security – Washington, DC

Experience

- Nonproliferation/Radiological Engineer, Nonproliferation and National Security Department, Brookhaven National Laboratory
- Graduate Research Intern, Nonproliferation and National Security Department, Brookhaven National Laboratory
- Intern, Foreign Affairs, Defense and Trade Sector, Congressional Research Service, Library of Congress
- Independent Researcher, Department of Philosophy, Department of Physics and Astronomy, Rutgers University

Accomplishments

- Led research project to verify exposure rate ranges of commonly used Region 1 Radiation Assistance Program Team and IAEA Inspector field equipment
- Presented “Proof of Concept: Building a Mobile Radiation Detecting Robot Using Household Items” at the 2018 Health Physics Society Annual Meeting
- At the Federal Affairs, Defense and Trade Division of the Congressional Research Service, submitted for publishing: *Radiological Security: Cesium Blood Irradiator Conversion Report*, *Cesium Blood Irradiator Conversion In-Sight*, *Arms Control Catalog* (Update), *Dirty Bombs Report* (Update)
- Helped develop health physics student/young professional development agreement(s) between Brookhaven National Laboratory and local universities
- Manipulated theoretical data from NASA superserver to simulate galaxies and Age of Reionization-relevant theories
- Limited proficiency in Urdu, Arabic, and Spanish

Education

- Master of Science, Health Physics (Nuclear Nonproliferation), Georgetown University
- Bachelor of Arts, Physics, Philosophy, Rutgers University - New Brunswick



Jennifer Kline

Acting Federal Program Manager
National Nuclear Security Administration
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Melanie Godinez

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Pacific Northwest National Laboratory
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Learn about the NNSA Graduate Fellowship Program online at
<http://www.pnnl.gov/projects/ngfp>

Program Administered by Pacific Northwest National Laboratory

