Nuclear Science and Engineering Research Center (NSERC)

Summer Internship Program (SIP)

Execution Plan

OPR: AFROTC/DOT

AFROTC.DOT.SharedCalendar@us.af.mil

334-953-5571

CAO: 4 Dec 23

Releasable to Cadets

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CHAPTER 1 – PROGRAM DESCRIPTION

1.1. The Defense Threat Reductions Agency (DTRA) provides a multi-disciplinary internship program with the purpose to enhance Department of Defense (DoD) capabilities, provide the next generation of military officers with Counter Weapons of Mass Destruction (CWMD) experience, and better prepare future military officers to lead, fight, and win on a battlefield involving weapons of mass destruction. DTRA's internship program is managed by its Nuclear Science and Engineering Research Center (NSERC) located at West Point, NY. The NSERC is responsible for partnering DTRA with military officer training establishments to facilitate research developing technologies which counter and deter weapons of mass destruction and improvised threat networks. This is a joint-force internship program. DTRA has offered **10 AFROTC slots** for this program. Internships could be offered at locations in Maryland, Ohio, Florida, Washington DC, Virginia, California, Tennessee, Washington State, New Mexico, and more. Training dates will be determined after selection and based upon area of research.

CHAPTER 2 – PROGRAM RESPONSIBILITIES

2.1. The following information is used to administer the NSERC SIP:

2.1.1. DTRA

2.1.1.1. Maintains overall program oversight, administration, funding, and overall responsibility.

2.1.1.2. Makes cadet selections from applications for the program.

2.1.1.3. Provides funding for travel, lodging and meals and coordinates accordingly.

NOTE: No HQ AFROTC funding or administration is provided for this program.

2.1.2. HQ AFROTC

2.1.2.1. Announces program opportunity via ARMS and posts NSERC SIP Execution Plan on TEAMS.

2.1.3. Detachment CC

2.1.3.1. Notifies cadets of internship opportunity and eligibility requirements, application process, and deadlines.

2.1.3.2. Verifies cadet eligibility and provides approval to participate in program prior to application submission.

2.1.3.3. Notifies HQ AFROTC of cadets who have been selected for the NSERC SIP. Ensures Field Training availability is updated in WINGS per AFROTC/DOF guidance (as applicable).

2.1.3.4. Annotates WINGS for cadet ODT credit upon verification of successful completion of the NSERC SIP utilizing the *AFROTC Miscellaneous ODT Documentation Quick Reference Guide* posted on TEAMS at *Reserve Officer Training Corps>DOT>Files>002 HQ Sponsored ODTs>000 Guidance*.

CHAPTER 3 – AFROTC CADET ELIGIBILITY

3.1. The cadet MUST meet the following requirements to be eligible for the NSERC SIP:

3.1.1. U.S. citizen.

3.1.2. Open to all AS levels and majors.

3.1.3. Recommend a cumulative GPA of 2.5 or higher.

3.1.4. Adjudicated DoD Secret clearance preferred. Limited unclassified and Secret internships available.

3.1.5. Continuing in the AFROTC for at least 1 semester program following the SIP.

3.1.6. **Field training takes priority and must be accomplished before other ODT opportunities.**

CHAPTER 4 – APPLICATION PROCESS

4.1. Detachment commanders and cadets must follow the steps below to apply for the NSERC SIP:

4.1.1. Detachment commander requirements:

4.1.1.1. Reviews the NSERC SIP Distribution Statement at Attachment 1 and the DTRA NSERC Internship Flyer at Attachment 2.

4.1.1.2. Notifies cadets of NSERC SIP opportunity, requirements for eligibility, and application process and deadlines. Provides interested cadets copies of Attachment 1 and 2.

NOTE: Detachment must ensure that cadets are committed to attend if selected.

4.1.1.3. Approves participation of eligible cadet applicant and annotates cadet record.

4.1.2. Cadet requirements:

4.1.2.1. Obtains approval from detachment commander to participate in NSERC internship BEFORE submitting application.

4.1.2.2. Completes digital NSERC SIP application according to flyer directions.

4.1.2.3. Apply utilizing the registration link on Attachment 2. Applications are being accepted now. Apply now! Deadline to apply is **31 January 2024.**

NOTE: If you have issues or questions regarding the application, contact DTRA NSERC POC: Maj David Fobar at (845) 938-0533 or email david.fobar@westpoint.edu.

Alternate POCs: LTC Nick Duncan; 845-938-0093; nickolas.duncan@westpoint.edu

Do not send any documentation to HQ AFROTC for this program.

CHAPTER 5 – PROGRAM IMPLEMENTATION

5.1. The following are accomplished after cadet selection:

5.1.1. DTRA NSERC staff will notify cadets/detachments of program selectees.

5.1.2. Detachment commander notifies applicable cadets of selection, SIP dates, and deconflicts field training attendance, as necessary.

5.1.3. Ensures cadet contacts NSERC POC as directed to verify SIP dates, coordinate travel (travel expenses advance authorization possible), lodging, meals, etc. and obtain other pertinent program details.

NOTE: Actions regarding program, travel, or orders for this ODT are not accomplished by HQ AFROTC**. All travel arrangements are coordinated by the DTRA NSERC staff.**

NOTE: Selected cadets must be cross-org'd in DTS to 'PHYS1'. NSERC will provide travel and reporting instructions.

5.1.4. Cadet completes all other detachment requirements, as applicable, prior to departure.

ATTACHMENT 1 – DISTRIBUTION STATEMENT A

Distribution Statement A: Approved for Public Release; Distribution is Unlimited: RD19-160

Defense Threat Reduction Agency (DTRA) - Internship Program

The Defense Threat Reductions Agency (DTRA) provides a multi-disciplinary internship program with the purpose to enhance Department of Defense (DoD) capabilities, provide the next generation of military officers with counter weapons of mass destruction (CWMD) experience, and better prepare future military officers to lead, fight, and win on a battlefield involving weapons of mass destruction. DTRA's internship program is managed by its Nuclear Science and Engineering Research Center (NSERC) located at West Point, NY. The NSERC is responsible for partnering DTRA with military officer training establishments to facilitate research developing technologies which counter and deter weapons of mass destruction and improvised threat networks.

Locations:

The NSERC has sent Engineering, Science, Mathematics, Humanity, Foreign Language, and Social Science majors to over 30 locations and align students based upon their academic background and personal interests. Some locations include:

- 20th CBRNE Command, Aberdeen Proving Grounds, MD
- 28th Test and Evaluation Squadron, Eglin AFB, FL
- Air Force Institute of Technology (AFIT), Dayton, OH
- Brookhaven National Lab (BNL), Upton, NY
- Defense Intelligence Agency (DIA), Washington D.C.
- Defense Threat Reduction Agency (DTRA), Fort Belvoir, VA
- Lawrence Livermore National Laboratory (LLNL), Livermore, CA
- Los Alamos National Laboratory (LANL), Los Alamos, NM
- Naval Information Warfare Center (NIWC) Pacific, San Diego, CA
- Naval Post-graduate School (NPS), Monterey, CA
- Naval Research Laboratory (NRL), MD
- Oak Ridge National Laboratory (ORNL), Oak Ridge, TN
- Office of the Secretary of Defense for Policy, Washington D.C.
- Office of the Chairman of the Joint Chiefs of Staff, Washington D.C.
- Pacific Northwest National Laboratory (PNNL), Richland, WA
- Pantex Plant, Panhandle, TX
- Sandia National Laboratories (SNL), Albuquerque, NM and Livermore, CA
- Technical Evaluation Assessment Monitor Site, Albuquerque, NM

Areas of Research:

- Detection of nuclear materials and weapons

- Nuclear weapon effects
- Nuclear weapon stockpile
- Military equipment survivability
- Applying machine learning to WMD problems
- US deterrence policy
- International WMD policy
- Analysis of international WMD capabilities

Prerequisites:

1. GPA 2.5 minimum.
2. Secret or Top Secret Clearance preferred. Limited unclassified internships available.
3. U.S. citizenship required

Number of Cadet Slots Available

The NSERC has the capacity to financially support approximately 10 ROTC cadets.

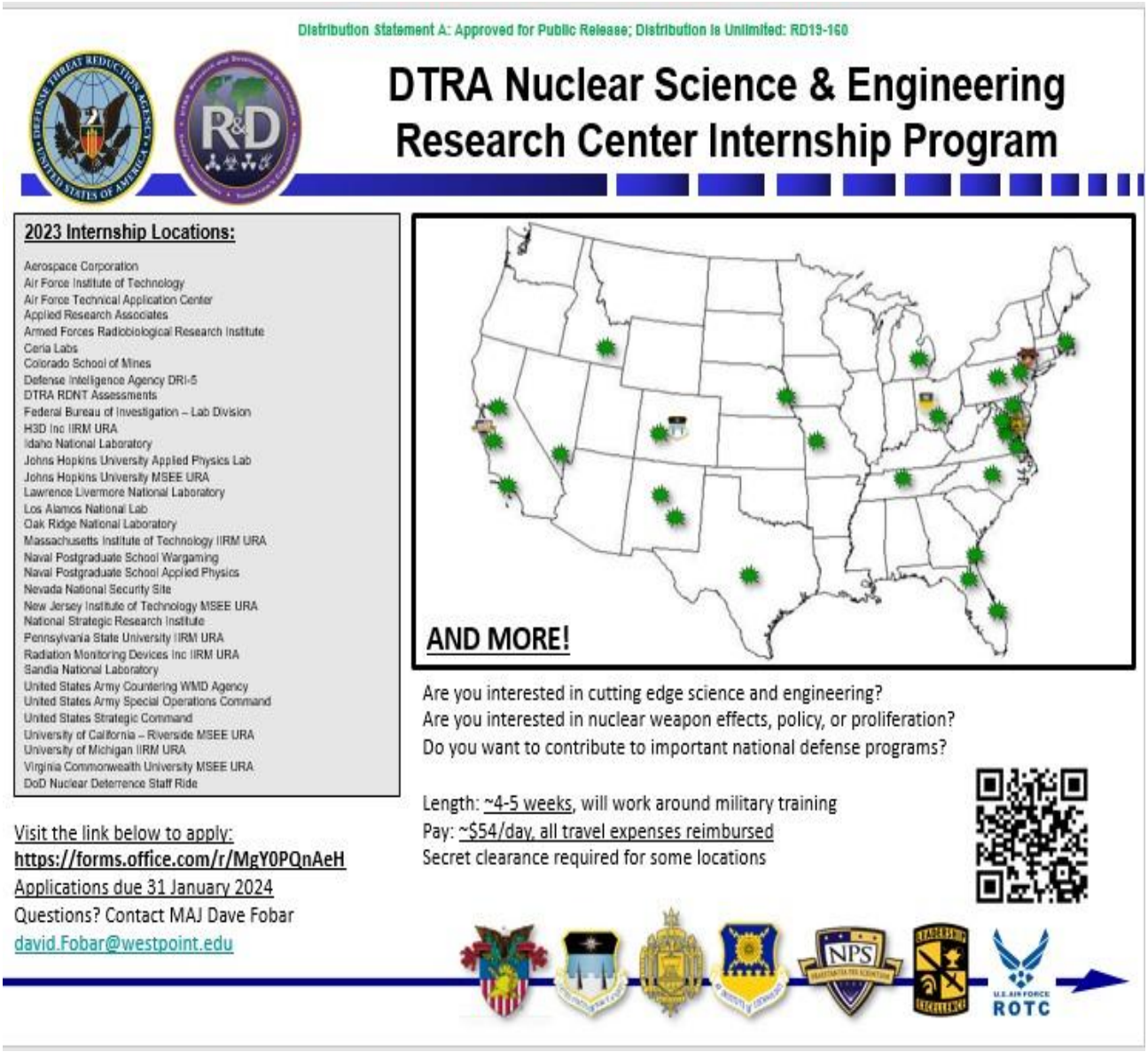
Preferred Degrees of Studies

Internship opportunities in nearly all academic majors are available. Countering and deterring weapons of mass destruction and improvised threat networks is an interdisciplinary challenge. Students will be placed into internships based on their academic background and personal interests.

ATTACHMENT 2 – DTRA NSERC SUMMER INTERSHIP FLYER

DTRA NSERC SUMMER INTERSHIP FLYER:

Approved for Public Release



INVERSE OF DTRA NSERC SUMMER INTERSHIP FLYER

Cross section of available internship projects. The NSERC has many other projects available.

Project Name	Project Description	Academic Majors
Multiphysics Modeling of Heat Shields	The student will perform computational simulation and data analysis for thermal protection system materials using in-house software packages and with python. They will have the opportunity to learn about how thermal protection system materials operate and are designed. They will also learn about high performance computing and large-scale finite element codes.	Chemical Engineering Mechanical Engineering Aerospace Engineering
Nuclear Weapon Response Analysis	Cadet will support the Weapon Response mission, the evaluation of mechanical and/or electrical insults to product during assembly and disassembly operations.	Electrical Engineering
Metal 3D Printing Lab	Project topics include but are not limited to 1) designing of metal am parts (including lattices), 2) design and optimization of print nozzle or other print equipment, 3) characterization of printed metal specimens, 4) development of process monitoring hardware and software, and 5) data analysis of large process data sets	Computer Science Mechanical Engineering Material Science Chemical Engineering
Nuclear Weapons Infrastructure Planning	Analysis of nuclear weapons infrastructure condition is necessary to advocate for funding for projects to address aging and inadequate infrastructure. We need students to help analyze data, evaluate trends, and project future infrastructure needs by running computer model investment forecasts. Additionally, students will develop area and system plans documenting activities such as facility new construction, recapitalization, consolidation, and disposition to improve the condition of the infrastructure for the mission.	Systems Engineering Business Management Urban Planning General Engineering International Relations & Policy
National Atmospheric Release Advisory Center (NARAC) Analyst Model Developer	National Atmospheric Release Advisory Center (NARAC) is the Department of Energy's plume modeling center, which has responded to chemical/biological/radiological/nuclear (CBRN) hazardous atmospheric releases including the Three Mile Island, Chernobyl, and Fukushima nuclear power plant incidents. Students will assist experienced staff to develop, maintain, and or utilize models to support operational responses.	Environmental Science Health Physics Civil Engineering Nuclear Engineering