

**United States Air Force
Institute for National Security Studies**



**FISCAL YEAR 2010
RESEARCH PROGRAM GUIDE**



DEPARTMENT OF THE AIR FORCE
USAF INSTITUTE FOR NATIONAL SECURITY STUDIES
USAF ACADEMY, COLORADO



25 June 2009

MEMORANDUM FOR ALL INTERESTED RESEARCHERS

FROM: INSS

SUBJECT: FY10 RESEARCH PROGRAM GUIDE

1. Attached are the USAF Institute for National Security Studies' (INSS) research topic areas for fiscal year 2010 (FY10). INSS is looking for volunteers to conduct these studies on behalf of INSS and its sponsor organizations. INSS provides funding for travel and associated expenses for selected projects. All military members are eligible to perform INSS research. Most civilian faculty, staff, and students at the military academies, intermediate service schools, senior service schools, and military degree-granting institutions and programs are also eligible.
2. If you are interested in performing research through INSS, please follow the research proposal submission instructions included in the first section of this guide. The deadline for the first round of proposals is **5 October 2009**; the second round deadline is **11 January 2010**. Although we will consider proposals received after the second deadline, our funds may be exhausted at that time.
3. INSS represents one of the best research opportunities available to the military academic community today. We offer potential researchers travel funding, publication opportunities, research contacts, and important real-world topics currently under study within the Department of Defense (DoD). The attached abstracts are merely guidelines, however. If you want to perform research on a subject that is not listed but you think should be considered, please submit a proposal to us. Similarly, you may combine topics or modify abstracts to fit your research interests. The INSS research proposal selection committee (comprised of representatives from our sponsoring organizations) will carefully consider all proposals submitted to us.
4. Best wishes in your research efforts during the coming year. I look forward to hearing from many of you in the weeks ahead.

JAMES M. SMITH, PhD, YA-3
Director

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INTRODUCTION

THE USAF INSTITUTE FOR NATIONAL SECURITY STUDIES

History. The Institute for National Security Studies (INSS) was created by the Air Staff in 1992 as a cost-effective way to use the military community's academic expertise and receive a better return on the Air Force's research investment. INSS' primary sponsor has been the Strategic Security Directorate on the Air Staff (HQ USAF/A3S). INSS is also supported by a number of other sponsor organizations that currently include the Secretary of Defense's Office of Net Assessment, the Defense Threat Reduction Agency, United States Northern Command, the Air Force Information Warfare Center, the Army Environmental Policy Institute, the Army Foreign Military Studies Office, the United States Military Academy Combating Terrorism Center, and other organizations. Through FY08, INSS contributed over \$3 million to support approximately 1100 projects.

Purpose. Located at the United States Air Force Academy in Colorado Springs, Colorado, INSS serves as a locus for research related to security studies, emphasizing topics in the fields of strategic security and controlling and combating weapons of mass destruction; homeland defense, combating terrorism, and asymmetrical warfare; regional and emerging national security issues; and air, space, and cyber issues and planning. In addition to its research efforts, the Institute conducts a broad range of other activities, including workshop organization, curricula development, and scholarly publications. Each year INSS invites our top researchers to present their findings to interested sponsor organizations. INSS presents two awards to our top researchers each year: our top researcher overall receives the Linhard Award (named after the late Major General Robert E. Linhard of the Air Staff, a great supporter of INSS), and the Outstanding Academy Researcher Award goes to the top researcher from the USAF Academy. Several of our best research products from each year are published as *INSS Occasional Papers* and as articles in many journals.

Mission. *To promote national security research for the Department of Defense within the military academic community, to foster the development of strategic perspective within the United States Armed Forces, and to support national security discourse through outreach and education.*

USING THE RESEARCH PROGRAM GUIDE

The topics listed in the FY10 Research Program Guide are current as of June 2009. *For the most complete and up to date listing of abstracts please consult the INSS homepage at www.usafa.af.mil/df/inss.* The abstracts in this guide are designed to help you submit a successful research proposal and are formatted as follows:

Organization. Each section of this guide lists a number of macro-topic areas and a list of subtopics/keywords to get you started on defining your research topic/question. You should identify areas that are of particular interest to you, research the current agenda and issue status in that area, and define a future-oriented topic for research.

Abstract Number. The topics areas are numbered sequentially. Use this number on all correspondence regarding the topic you wish to research. If you modify a topic area or combine two or more topics, please refer to your project by the number(s) of the topics(s) that most closely correspond(s) to your research proposal. *Remember, the attached topics are merely guidelines. If you want to do research on a topic that is not listed but you believe should be covered, please submit a proposal to INSS. This is especially appropriate for those potential researchers who have specific expertise in any of the topical areas of interest to INSS.*

POC. Call INSS with any questions on the listed topics or submission of a proposal. Or if you have general questions about the INSS research program or about a broader research topic area, please contact INSS. After award of research sponsorship, INSS may be able to provide a POC with specific expertise related to your research.

Key Terms. The research guide does not contain an index. Please use the electronic version of this guide on the INSS homepage to search for key terms.

SUBMITTING A RESEARCH PROPOSAL

Eligibility. The following categories of individuals are normally eligible for INSS research funding: 1) military members and DOD civilian personnel; 2) military and most civilian faculty, staff, and students at the military academies, intermediate service schools, senior service schools, and military degree-granting institutions and programs; and 3) INSS research partners under a formal CRADA or research agreement. INSS cannot fund civilians, including retired military members, unless they are current employees of the United States government; this excludes contractors from funding unless they are specifically contracted by INSS.

Note to Reserve Component members: INSS does not control any man-days for use when completing INSS projects.

Note to USAFA Cadets: *You must work with a faculty member supervisor when conducting INSS research. The faculty member will act as POC and will oversee the research and writing process. It is recommended that you register as an independent studies student under the POC so that you may obtain formal academic credit for your research and writing efforts. Also note that INSS research is NOT a formal Cadet Summer Research Program option. Cadets wanting to accomplish INSS*

research during the summer are responsible for coordinating their own summer program schedule and may have to give up leave to travel in support of their INSS project.

Research Teams. More than one researcher can work on a single project. Moreover, INSS highly encourages multidisciplinary collaboration.

Funding. INSS funding is designed to assist researchers conduct *primary* research on their topic (interviews, site visits, archival research, etc.). Conference attendance may be supported, but specific details on the research contribution of the conference must be provided for that determination. Most INSS funding goes toward travel expenses and related costs. The amount awarded for individual INSS research projects has averaged just over \$3,000, and very few proposals can be funded at levels over \$6000. Researchers file travel vouchers to be reimbursed for travel expenses based on the official government travel and per diem rates for specific locations as listed in joint travel regulations. INSS does not award unrestricted block grants. INSS cannot pay salaries and normally does not pay for office-related expenses (copying, typing, office supplies, etc.), computer purchases, capital equipment costs, and books. You will normally cut your orders in DTS in coordination with INSS and using one of our fund cites. More specific details on the mechanics of funding and cutting orders will be provided to you if your proposal is selected for funding.

Deadlines. The INSS research proposal Selection Committee meets twice each year. Applicants wishing to be considered in the first round should submit their proposals to INSS no later than **5 October 2009**. First round selections will be released and applicants notified in November. If you need more time to prepare your proposal, or will do your primary research in the spring and summer of 2010, second round proposals will be accepted through **11 January 2010**. Second round selections will be released and applicants notified in February. INSS will consider proposals received after 11 January, but all INSS research funds may already be committed by that time. **IN ALL CASES, THE COMPLETED PROJECT WILL BE DUE TO INSS NLT 1 OCTOBER 2010.**

INSS Website. The INSS Website (<http://www.usafa.af.mil/df/inss>) contains the most complete and up-to-date information on abstracts and submission procedures. *All applicants should reference the INSS Website prior to submitting proposals.*

Conference Support Proposals. INSS also occasionally supports academic conferences of interest to our sponsoring organizations. We may be able to provide small grants (\$5,000 or less) to conference organizers to help defray the cost of speaker travel and/or facilities expenses. Please be specific in requesting funding, explaining exactly how the funds are to be used. INSS conference support must be processed through a DoD sponsor organization that is involved with hosting the conference, and significant lead time is required to process required paperwork. Conferences with a specific product or developmental purpose tied to our sponsors' interests compete most successfully for INSS support.

Proposal Submission Procedure. Most of the successful research proposals submitted to INSS highlight project significance, objectives, and a research plan in 2-4 pages. Use the format on the following page to apply for INSS research support or to request conference support. ***Please submit all proposals in electronic format to INSS via email attachment.***

MEMORANDUM FOR INSS

Date

FROM: (Name, address, email address, phone number, and fax number of principal researcher)

SUBJECT: (Title of research proposal)

1. **Project Summary:** This is the most important part of the application. Please be as specific, yet concise, as possible.
 - a. Topic number as listed in this Research Guide
 - b. Project’s significance and specific policy relevance
 - c. Research objectives
 - d. Methods to be employed/research plan
 - e. Planned use of the results (publication, policy implementation, etc.)
2. **Researcher Qualifications and Status:** Provide a paragraph on the personal qualifications of each researcher, including academic background and research experience. Also indicate DoD employment status (active duty, reserve/guard, civil service, accepted service, etc.). It is particularly important for civilian government employees to provide clear and detailed status information.
3. **Prior Results:** List any previous research grants and provide a summary of completed work, applicable publications, etc. Also, provide any background information that will help the selection committee better understand your proposal.
4. **Contribution to Military Education:** Explain student participation or other educational benefit in or from the project. State if and how the project will benefit your school or other military education efforts. *Note: Faculty members are encouraged to solicit student participation in research projects when possible.*
5. **Budget:** This section should be as detailed as possible and must include the following:
 - a. *Travel:* Purpose, location, length of stay, and estimated cost (from the Joint Travel Regulation/DTS) of each trip, including conference attendance.
 - b. *Other:* Any other anticipated expenses.

Note: It is helpful to the Selection Committee to include a total amount requested in the proposed budget as well as an acceptable partial funding amount should the committee warrant funding your proposal, but not have sufficient funds available to fully fund your request.

PROPOSAL SELECTION PROCESS

Winning INSS research funding is a competitive process. Approximately 65 percent of proposals submitted to INSS are awarded some level of funding. A Selection Committee comprised of representatives from the USAF Academy faculty, INSS, and INSS’ sponsoring organizations will evaluate your proposal for its quality, likely contribution to policy making, and utility to national security education. Factors considered in the selection process include:

- | | |
|----------------------------------|--|
| Abstract priority | Interdisciplinary team mix |
| Sponsor applicability | Policy influence/publication potential |
| Quality of anticipated research | Educational benefits (process and product) |
| Novel, “out of the box” approach | Identification/development of new trends |

ADMINISTRATIVE PROCEDURES FOR PERFORMING RESEARCH

Research Process. The proposal acceptance letter from INSS is your authorization to perform officially sanctioned research on your topic. Please carry your letter with you when performing research and refer to it as required should questions arise. Each researcher is responsible for all the details of their research trips (obtaining home unit permission to travel and travel orders, making travel arrangements, obtaining country clearances, lodging reservations, setting up interviews, etc.). Coordinate with INSS before deviating significantly from the research plan approved in your research proposal. **Note to USAFA Faculty and Cadet Researchers:** *Faculty researchers should make their travel arrangements through the Defense Travel System (DTS). Travel reservations for cadets must be arranged with WingGate Travel (located on the fifth floor of Fairchild Hall). Travelers should book tickets at the government TDY rate. Personal travel rates may not be appropriate for travel on INSS orders, so check before booking your own tickets. Moreover, those traveling overseas must coordinate with DFIP (also on Fifth Floor of Fairchild, office 5L4) to determine if a country clearance is required. Failure to do so could result in delays or cancellation of travel. DFIP can also assist with passport and visa applications.*

Orders, Obligations, and Outlays. The mechanics of funding hundreds of research trips worldwide can be complex and time consuming. Where possible, travelers should use the DTS to make their arrangements. You will need to contact INSS for a fund cite to process your orders. Call to begin coordinating the details of your funding and orders *no later than two weeks prior to your intended travel date*. INSS funding is based on the fiscal year. Therefore, your designated funding must be obligated no later than approximately *15 August* and spent no later than *30 September*. Send a copy of all processed travel vouchers and other receipts showing how much you have spent to Ms Christy Figueroa at INSS as soon as possible after completing travel.

Required Reports. Each funded project must have a principal researcher. The principal researcher is responsible for deadlines, control of research support funding, contact with the POC/INSS during the study, and completion of the following reports (to be submitted to INSS as specified below):

Research Design/Plan. A written outline of your research plan—specifically your expanded topic definition, detailed research objectives, plan and sources for how you are going to fulfill those objectives. While first-round proposal researchers (and particularly NDFs and others whose completed papers are due to their educational institutions in the May timeframe) are highly encouraged to submit their plans prior to the end of the calendar year, first-round researchers must submit their plans *NLT 15 January*; second-round researchers must submit their plans *NLT 31 May*.

Spending Update. Call, email, fax, or write INSS with the details on how much money you have spent and how much more you plan to obligate on your project. The update is due no later than *31 May*. This update allows INSS to reprogram any unspent funds.

Administrative Report. A written summary of how your grant money was spent, persons and places you visited, presentations you made, and articles or other publications in conjunction with the research project. Also include an address and phone number where you can be reached during the fall of 2010. Submit this report no later than *1 October 2010*.

Research Report. The primary product from your project is a detailed paper (normally a minimum of 30-50 typed, double-spaced pages) describing your research results. *Submit an electronic copy.* Whenever possible, prepare this document using Microsoft Word, Times New Roman 11 or 12 point font, and use the current edition of Turabian or the Chicago Manual of Style. If your academic program requires a different style or format, comply with their requirements and INSS will adjust as required. Our preference is for citations to be formatted as Endnotes rather than Footnotes or parenthetical references. Submit your final product for security and policy review according to your local procedures, and forward a copy of the final clearance to INSS. **The completed report is due no later than 1 October 2010.**

Policy Summary and Briefing Slides. Senior officials in the DoD/Services policy community are interested in the specific policy implications and recommendations flowing from your research. Submit a 6-10 page “policy summary” of your results tailored to the senior audience. Also submit a brief set of slides—using relatively low memory requirement formats—that constitute a briefing of the policy summary (not of the full research report; not more than 6-10 slides). The policy summary and slides need to be based on some thoughtful and careful audience analysis. Selected policy summaries and slides will be forwarded into DoD/Service policy channels with the potential for follow-on invitation for presentation beyond the INSS process. Our sponsors have indicated that only a pointed, brief package such as this will get visibility at the higher levels. Submit in electronic format with the final report no later than 1 October 2010.

HOW TO REACH INSS

For additional information about INSS, assistance preparing a research proposal, or administrative questions about a research grant, please contact the Institute staff.

Director:	Dr James Smith, x2717 James.Smith@usafa.edu
Deputy Director:	Lt Col Mark Heredia, x2717 Mark.Heredia@usafa.edu
Budget Assistant:	Ms Christy Figueroa, x2717 Christy.Figueroa@usafa.edu
USAF Institute for National Security Studies	Voice: (719) 333-2717/2695
HQ USAFA/DFES	Fax: (719) 333-2716
2354 Fairchild Drive, Suite 5L27	DSN: 333-2717
USAF Academy, CO 80840-6258	
	INSS@usafa.edu
	http://www.usafa.af.mil/df/inss

FY 2010 RESEARCH PROGRAM GUIDE

1. STRATEGIC ISSUES

***Note:** Much of the security focus today is on asymmetrical dimensions of conflict at lower levels of the spectrum of violence. However, strategic threats and vulnerabilities remain significant areas of security concern. The Department of Defense, and certainly the Air Force and Navy, have a national responsibility to maintain focus on this dimension of threat and response. As the strategic environment evolves, a range of issues and questions requires thoughtful examination and analysis.*

1.1 Deterrence: Deterrence is being adapted to new forms and roles while also maintaining its traditional place at the center of United States strategic policy. Research and expanded thought leadership is needed to ensure the wisdom and credibility of new directions and dimensions of this foundational concept.

Subtopics/Keywords:

- National Strategic Objectives
- Nuclear/Conventional
- Targets and Strategies
- Hedging and Breakout
- Extended Deterrence
- Limited Deterrence
- Minimum Deterrence
- Strategic Stability
- Tailoring Deterrence
- Deterring Non-state Actors
- Force Requirements
- Dissuasion

1.2 Proliferation: Proliferation issues today are never far from the headlines, and they are becoming firmly set at the center of United States security challenges. Analysis is needed to address a range of policy questions: from dealing with rogues to possibilities of proliferation by friends; better addressing supply-side issues to effectively addressing demand-side concerns; integrating arms control imperatives to address proliferation drivers; integrating policy and operational dimensions.

Subtopics/Keywords:

- Counter-proliferation
- Latency
- Extended Deterrence
- Breakout
- Non-proliferation
- Regimes and Norms

Cascading Proliferation
Regional Military Balances
Nuclear Nonproliferation Treaty (NPT)
NPT Regime
Export Controls
Proliferation Security Initiative (PSI)
Counterproliferation Initiative

1.3 Arms Control and Disarmament: As arms control and disarmament re-emerge onto the top of the national security policy agenda, what are the issues and concerns for the Department of Defense and the strategic Services? What are the dynamics of the 21st century variant of arms control that particularly affect the United States strategic force posture? How does the coming strategic force drawdown affect Service equities?

Subtopics/Keywords:

Strategic Stability
Nuclear Infrastructure
Nuclear Drawdown/Disarmament
Transparency/Verification
Strategic Posture/Tradespace
Definitions/Counting Rules
Responsiveness
Multilateralizing Arms Control
Offense/Defense Relationship
Nuclear/Conventional Linkages

1.4 Strategic Posture: As ongoing strategy reviews and initial arms control negotiations play out, and as we adapt and deepen our understanding of future deterrence and strategic requirements, it is necessary to review and adapt our force composition and posture to the new and emerging conditions and tasks.

Subtopics/Keywords:

Military Requirements/Capabilities
Offensive/Defensive Postures and Balance
Conventional and Nuclear Capabilities/Tradeoffs
Strategic Posture
Regional Postures
DoD Structure/Roles and Missions
Air Force Command Structure/Relationships
US Nuclear Policy
Role of DOE National Laboratories
Experience/Expertise “Brain Drain”

1.5 International and Regional Strategic Security/Issues: The United States has a global presence in pursuit and protection of global interests. As a result, it relies on allies and partners in virtually all of its international activities. What global trends are most affecting US roles and interests? What pressures are stressing traditional alliances? What prospects are there for enhancing regional partnerships and stability, and what drivers of regional instability must we counter? What force posture/basing/presence plans best position us to further our interests?

Subtopics/Keywords:

- Alliances/Alliance Cohesion
- Regional Stability/Instability
- Regional Partnerships and Partners
- Rising Global/Regional Powers
- Emerging Strategic Technologies
- Combatant Command Area of Responsibility Structure
- Regional Presence/Posture/Basing

1.6 Security Strategy: Product and Process: The US policy and strategy process has evolved across the Cold War and its aftermath, and has adapted in response to conditions following 9/11. Does this process fit the requirements of the emerging international security environment? Are its current products suited to current and near-term threats and requirements? Is the system responsive or reactive?

Subtopics/Keywords:

- Interagency Process
- National Interests
- Grand Strategy
- National Security/Military Strategy
- Military Force Structure
- Modernization/Sustainment
- Human Capital Development

1.7 WMD: Protection against and response to attacks by Weapons of Mass Destruction is a critical military mission set. However, there is today no single definition of “WMD” across the interagency or the international community, and there are differences in approaches, doctrine, and capabilities that complicate the tasks of combating WMD. This topic asks researchers to grapple with the hard academic, legal, and operational issues of conceptualizing and responding to WMD toward common legal, doctrinal, and operational frameworks.

Subtopics/Keywords:

- WMD Definition
- Mass Disruption
- Mass Effects
- Military/First Responder Interface
- Counter-Proliferation

Crisis Management
CBRNE Weapons
NBC Weapons

1.8 Consequence Management: As a follow-on to the WMD topic above, the other side of the WMD mission and companion to crisis management is responding and mitigating catastrophic effects after an attack has taken place. This topic adds that dimension.

Subtopics/Keywords:

Damage Limitation
Critical Infrastructure
DoD and Defense Concerns
Homeland Security/Homeland Defense
Resilience
Attribution
First Responder/Support to Civil Authorities Relationships

2. Emerging Issues

NOTE: The researcher should identify emerging issues that will drive major changes in the international system and security of a state. The researcher may more fully develop/expand on globalization's impact on international relations, economic, environmental, health, and technology transfer. The impact to future strategic balances and alliances should be examined, along with relevant policy gaps, potential solutions, and military implications.

2.1 Rise of Multilateralism: What are the implications to national security during a decline of US hegemony? Examine varying scenarios in the rise of multilateralism and relative US decline. What should the US position be in respect to multinational organizations and competition from emerging powers?

Subtopics/Keywords:

Challenges to US Hegemony/US Decline

Role of Military Alliances (NATO)

Role of Supranational Organizations (UN, EU, SCO, ASEAN) and Processes (6-Party Talks)

Interoperability with Potential Allies

Building Partner Capacity

Regional Engagement (Allies and Competitors)

Regional Military Balance

Global Leadership Challenge

Military Alliances vs Military Partnerships

2.2 Global Communication: How has information connectivity and reliance on information technology presented national security vulnerabilities? Examine which states and non-state actors present viable threats. What position should the Department of Defense take and how should it respond to varying threats in the cyberspace domain? Case studies of recent cyberattacks may also be examined. How do insurgents and terrorists leverage information technology?

Subtopics/Keywords:

International Law/Domestic Law

Targets and Strategies

State Actors/State Sponsored/Non-state Actor

Critical Infrastructure Protection

Outsourcing Functions (Banking)

Social Networking

Disruption

Force Multiplier

Cybermobilization

Cybercommand

Comparative Technological Advantages

Privacy/Security

Strategic Communication

Technology Resourcing and Policy

2.3 Science and Technology: Identify areas of transformation for the Department of Defense. Evaluate our competitive and comparative advantages as well as our limitations.

Subtopics/Keywords:

Science and Technology Investment
DoD Acquisition Policies
Technology Resourcing
Emerging Technologies
Foreign Military Sales
Technology Transfers

2.4 Population Growth and Movements: Examine risks to regional and state stability as a result of population growth and movement. What will be the impacts of increased competition for resources? How will urbanization result in changes to military force structure and training? How will aging populations of the OECD countries result in global instability?

Subtopics/Keywords:

Resource Competition
Aging
Youth Bulges
Urbanization
Insurgency
Migrant Workers
Identity Politics
Pandemics
Rural-Urban Divide

2.5 Identity Politics: Evaluate impacts of national and cultural identities to state and regional stability. How should the US engage in different regions based on identity politics? Evaluate the cultural knowledge DoD personnel should possess to effectively engage. How can shifts in demographics result in instability?

Subtopics/Keywords:

Nationalism (Afghanistan, Pakistan, Iraq, elsewhere)
Implications of Ethno-Determination/Self-Determination
Demographics Pressures/Crises
Human Rights
Forces Supporting Internal Cohesion
Partnership during Political Transition (e.g. Pakistan, Thailand, Ukraine, Georgia, Romania)

2.6 Interagency: Examine current interagency cooperation for successful lessons learned and areas for improvement. Where can DoD achieve synergy with other agencies? How can the DoD foster interagency cooperation through incentives or education? How can the DoD support other agency roles?

Subtopics/Keywords:

Combatant Commanders/Theater Cooperation
State Department Foreign Service Officers
Foreign Policy Advisors
Culture/Language Training
Regional Affairs Officers/Political Military Affairs Officers
Developing Air Force Leaders
Provisional Reconstruction Teams
Foreign Service Institute
AFRICOM/SOUTHCOM Models
Failing States
Humanitarian Relief Operations
Civil-Military Cooperation

2.7 Global Economy: As globalization has increased the interdependencies between nations' economies, how does this present risks to national security? How does disruption in the global economy create risk? What are the impacts to defense industry, military spending and military readiness?

Subtopics/Keywords:

Financial Crisis/Instability
Military Spending/Resources
Economic Reliance/Economic Warfare
Economic Development Models
Currency Valuation
Technology Transfer
Regional Instability Due to Economic Decline
Flashpoints in Vulnerable Regions
Foreign Military Sales: Risks vs. Benefits
Competitiveness of US Defense Industry

2.8 Culture: Evaluate DoD understandings of language and culture. Are there global/regional cultural norms that we need to analyze? How well do we equip our leaders and members to understand the cultures in which the military will operate? How do we identify foreign leaders and key influencers to promote stability?

Subtopics/Keywords:

Political Affairs Specialist/Regional Area Specialists
Professional Military Education Curriculum
Service Academy Curriculum
Democratization
Human Rights
Genocide
Public Affairs
Counterinsurgency/Counterterrorism
Winning Hearts and Minds

2.9 Human Security: Identify the role of the DoD in promoting human security.

Subtopics/Keywords:

Doctrine of Responsibility to Protect

Genocide

Pandemics

Global Warming

Humanitarian Operations

Provisional Reconstruction Teams

3. ENVIRONMENTAL SECURITY AND SUSTAINABILITY

NOTE: The broader environmental, environmental health, and sustainability topics, subtopics, or questions presented may be more fully developed and expanded upon by the researcher as case studies of one or more nations or of an applicable region. Relevant policy gaps, potential solutions, and military implications should be identified.

3.1 Climate Change: What are the strategic challenges presented by climate change? How can climate change enhance or precipitate conflict? What policy, doctrine, and strategy changes are required to address these challenges? Can international institutions meet these challenges, and can the United States provide leadership to respond to climate change?

Subtopics/Keywords:

- Water Security
- Food Security
- Migration
- Pandemics
- Adaptation
- Polar Security
- Climate Engineering
- CO2 Entrapment
- Desertification
- Mitigation

3.2 Energy Security/Independence: How does reliance on non-renewable sources of energy influence US national security interests? What are the long-term global and regional implications of energy competition? How can the Department of Defense promote its own energy independence?

Subtopics/Keywords:

- Energy Efficiency
- Energy Independence
- Alternative Sources
- Clean Energies
- Emissions Regulation
- Carbon Footprints
- Energy Politics/Green Politics

3.3 Critical Natural Resources: How do natural resources dependencies influence United States national security interests? Does mapping the sources of critical defense resources indicate security challenges for the United States?

Subtopics/Keywords:

- Ecosystem Services
- Biodiversity
- Sustainable Practices
- Rare Earth Elements
- Defense Critical Resources

3.4 Resource Competition/Conflict: Work remains to be done on studying the role of resources in triggering and/or deepening conflict. How do water, energy, food, and other resources relate to regional conflict? Can resource issues be forecasted, monitored, regulated, managed, or moderated to avoid or mitigate potential conflict? What long-term sustainability practices could be developed and implemented in areas of critical resource distributions?

Subtopics/Keywords:

- Scarcity
- Abundance
- Renewable Resources
- Non-Renewable Resources
- Sustainable Development

3.5 Regional Cooperation: Do regional actor views of resource and environmental security offer opportunities for US policy to help shape cooperative responses? Identify and analyze cases of regional environmental and resource cooperation with specific focus on local military roles and potential for COCOM programs to further that cooperation.

Subtopics/Keywords:

- Theater Security Cooperation
- Mil-to-Mil Engagement
- Multi-National Agreements
- Alternative National Practices and Models

3.6 State Fragility/Regional Stability: What environmental security issues and dynamics may, if left unchecked, erode governmental legitimacy, contribute to instability, and foster conditions of internal, cross-border, and regional conflict and political violence? What are the long-term relationships between security, the environment, stability, and sustainability?

Subtopics/Keywords:

- Root Causes of Instability
- Environmental Factors/Dynamics
- Degradation/Depletion/Scarcity
- Demographic Pressures
- Water Systems

3.7 Pandemics: What is the role of emerging/resurgent diseases and pandemics as a challenge to national security and to force protection? What military roles are possible/appropriate in responding to a pandemic?

Subtopics/Keywords:

- Emerging Diseases
- Climate Change
- HIV/AIDS
- Waterborne
- Military Readiness/Sustainable Operations

3.8 Technology/Innovation: Technology offers a two-edged sword to environmental security and sustainability. Technology offers the possibility of answers to many of the challenges, but it also poses the potential for new and expanded challenges into the future. This area provides opportunities for research into both the promise and the peril of technological development.

Subtopics/Keywords:

- Green Chemistry/Construction/Procurement
- Clean Energy
- Nanotechnology
- Biotechnology
- Space-based Solar Power
- Desalinization
- Weapons Systems
- Environmental Information and Intelligence (E2I)

3.9 Operational Sustainability: With a continuing and expanding global emphasis on environmental conventions and regulatory regimes, and with the emphasis that many of our operational host nations and partners place on these regimes, the United States military must incorporate environmental and sustainability factors into its operational planning.

Subtopics/Keywords:

- Environmental Information and Intelligence (E2I)
- Sustainability Planning/Practices
- Zero-Footprint Base Camps/Forward Operating Bases
- Post-Conflict Footprint

3.10 National Security Planning: The United States security policy and planning process provides overall mission guidance for military Services and operational commands, and it provides an interactive forum for functional communication and coordination. As environment and sustainability rise to visible levels of impact on all facets of military operations, what places and roles should environment and sustainability play in this strategic-level process? Where should environmental and sustainability guidance be introduced, and with what relative place and priority?

Subtopics/Keywords:

- Roles and Responsibilities
- National Military Strategy
- Quadrennial Defense Review
- National Security Strategy
- National Defense Strategy

4. TWENTY-FIRST CENTURY CONFLICT

NOTE: The researcher should indentify the evolving character of modern conflict and examine our understanding of future threats, their relative priorities, and our optimal posture to respond and defend across the spectrum of warfare. Are our DoD and government structures suited for these emerging threats? Are our defense planning, resource allocation decisions, force structure, and education and training investments reflective of emerging threats? Provide recommendations to respond to new forms of warfare.

4.1 Emerging Character of Conflict. Identify future areas of conflict and adversary response. Is our combatant command (COCOM) structure appropriate? How do we transform the DoD from old ways of thinking to best posture for future scenarios? What types of conflict will resemble previous conflicts, which will be employed simultaneously, and where are new battle grounds emerging?

Subtopics/Keywords:

- COCOM Structure
- Spectrum of Conflict
- Unrestricted Warfare
- Hybrid Warfare
- Irregular Warfare
- Resource Warfare
- Economic Warfare
- Ethnic Conflict
- Cultural/Religious Conflicts
- Information Warfare
- Environmental Warfare
- Asymmetric Coalitions
- Frozen Conflicts (e.g. Korea, Balkans, Cyprus)

