

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



**FISCAL YEAR 2012
RESEARCH PROGRAM GUIDE**



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



10 June 2011

MEMORANDUM FOR ALL INTERESTED RESEARCHERS

FROM: INSS

SUBJECT: FY11 RESEARCH PROGRAM GUIDE

1. Attached are the USAF Institute for National Security Studies' (INSS) research topic areas for fiscal year 2012 (FY12). 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 **3 October 2011**; the second round deadline is **9 January 2012**. 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
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 Plans and Policy Directorate on the Air Staff (HQ USAF/A5XP). 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 FY11, INSS has provided almost \$3.5 million in research funding to support approximately 1140 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 best researchers each year: our top researcher overall receives the Linhard Award (named after the late Major General Robert E. Linhard of the Air Staff), 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 Research 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 FY12 Research Program Guide are current as of June 2011. *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 point of contact 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. We recommend 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. Similar guidance applies to USMA Cadets and USNA Midshipmen.

Research Teams. More than one researcher can work on a single project. 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 over the past 18 years has averaged just under \$4,000, and very few proposals can be funded at levels over \$6,000. Researchers are 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, or 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 **3 October 2011**. 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 2012, second round proposals will be accepted through **9 January 2012**. Second round selections will be released and applicants notified in February. INSS will consider proposals received after 9 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 2012.**

INSS Website. The INSS Website (<http://www.usafa.edu/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)	
<p>1. Project Summary: This is the most important part of the application. Please be as specific, yet concise, as possible.</p> <ul style="list-style-type: none"> 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.) 	
<p>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.</p>	
<p>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.</p>	
<p>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. <i>Note: Faculty members are encouraged to solicit student participation in research projects when possible.</i></p>	
<p>5. Budget: This section should be as detailed as possible and must include the following:</p> <ul style="list-style-type: none"> a. <i>Travel:</i> Purpose, location, length of stay, and estimated cost (from the Joint Travel Regulation/DTS) of each trip, including conference attendance. b. <i>Other:</i> Any other anticipated expenses. <p><i>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.</i></p>	

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 (the Faculty International Programs office, also on Fifth Floor of Fairchild Hall, 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 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 July* 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 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 2012. Submit this report no later than *1 October 2012*.

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 format your report in accordance with 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 2012.**

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 2012.

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.

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	INSS@usafa.edu
	http://www.usafa.edu/df/inss

INSS Researcher Checklist

Research your topic; define your research focus and objectives

Design your initial research plan

Create your travel plan and budget

Write and submit your proposal to INSS

FY12 Round One

Due 3 October 2011

FY12 Round Two

Due 9 January 2012

Tailor/refine your research and travel plans for approved research

Round One Approved Research

Submit 15 January 2012

Round Two Approved Research

Submit 31 May 2012

Submit Country Clearance and Visit Requests as required

Request orders/obligate INSS travel funds as required (but plenty early and NLT 1 June 2012)

Update and submit final spending plan for approved research

Submit 31 May 2012

Submit Research Report, Policy Summary/Briefing Slides, and Administrative Report

NLT 1 October 2012

FY 2012 SUGGESTED RESEARCH AREAS

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
- Nuclear Assurance
- Extended Deterrence
- Limited Deterrence
- Core Deterrence/Sole-Purpose
- Minimum Deterrence
- Strategic Stability
- Strategic Perspectives
- Tailoring Deterrence
- Deterring Non-state/Alternate Rationality Actors
- Non-nuclear Deterrence and Stability
- Force Requirements/Posture
- Global/Regional Postures and Stability
- Dissuasion
- Declaratory Policy
- Ending Nuclear Deterrence

1.2 Proliferation: Proliferation issues today are never far from the headlines, and they are 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:

- Nonproliferation
- Counter-proliferation
- Latency
- Extended Deterrence
- Breakout
- WMD Terrorism
- Regimes and Norms
- Cascading Proliferation
- Regional Military Balances
- Nuclear Nonproliferation Treaty (NPT)
- NPT Regime
- Export Controls
- Cooperative Threat Reduction
- Nuclear Materials Security
- Proliferation Security Initiative (PSI)
- Counterproliferation Initiative
- Nuclear Weapons Free Zones

1.3 Arms Control and Disarmament: As arms control and disarmament reclaim a spot at 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? What are the implementation imperatives of the New START Treaty, and what comes next? How does the expected long-term strategic force drawdown affect Service equities?

Subtopics/Keywords:

- Strategic Stability
- Nuclear Infrastructure
- Nuclear Drawdown/Disarmament
- Transparency/Verification
- Verification of Armament vs. Disarmament
- Warhead/Re-entry Vehicle Verification
- Confidence and Security Building Measures and Transparency
- Flexibility and Predictability
- Strategic Posture/Tradespace
- Definitions/Counting Rules
- Responsiveness
- Non-Strategic Nuclear Weapons/Strategic Stockpiles
- Multilateralizing Arms Control
- Offense/Defense Relationship
- Nuclear/Conventional Linkages
- Non-nuclear Arms Control
- Examining Treaties to which the US is not a Signatory
- New START Treaty Follow-on Negotiations

1.4 Strategic Posture: As recent strategy reviews and arms control agreements 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
- Prompt Global Strike Options/Analysis
- Strategic Posture
- Regional Postures
- US Nuclear Policy
- Alert Posture/Responsiveness
- DoD Structure/Roles and Missions
- Force Element Sustainability/Reliability
- National Infrastructure
- Roadmap for Future of Each TRIAD Element (Old TRIAD and New TRIAD)
- Experience/Expertise “Brain Drain”
- Human Capital Development

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 and provide assurance to our key allies and friends?

Subtopics/Keywords:

- Alliances/Alliance Cohesion
- Regional Stability/Instability
- Regional Partnerships and Partners
- NATO Strategic Concept and Non-Strategic Nuclear Weapons
- Rising and Declining Global/Regional Powers
- Emerging Strategic Technologies
- Combatant Command Area of Responsibility Structure/Operational Relationships
- Regional/Global Operations and Area of Responsibility Integration
- Regional Access/Denial and Forward Basing/Global Strike Tradespace
- Regional Presence/Posture/Basing
- Extended Deterrence/Reassurance
- Coupling

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? How do potential adversaries and allies

view strategic issues? How do these perspectives/strategies mesh into our strategic processes?

Subtopics/Keywords:

- Interagency Process
- Multinational Processes
- National Interests
- Grand Strategy/Comparative Grand Strategies
- National Security/Military Strategy
- Military Force Structure
- Interoperability
- 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
- Attribution
- Elimination
- Military/First Responder Interface
- Counter-Proliferation
- Crisis Management
- Consequence Management
- CBRNE Weapons
- NBC Weapons

1.8 Homeland Security/Homeland Defense: DoD today has significant Homeland Defense responsibilities, all of which have complex and sensitive operational, legal, interagency, international, and command and control dimensions. In addition, military roles and taskings under the Homeland Security banner (support to civil authorities) entail both designated and ad hoc dimensions. This is an important area for insightful research.

Subtopics/Keywords:

- Consequence Management/Damage Limitation
- Critical Infrastructure Protection/Reconstitution
- DoD and Defense Concerns
- Support to Civil Authorities Missions/Planning
- Natural and Man-made Disaster Responses
- Resilience

Attribution

First Responder/Support to Civil Authorities Relationships

1.9 Strategic Wildcards: Examine strategic issues outside of current nuclear power balances that pose the danger of upsetting strategic stability as traditionally considered.

Subtopics/Keywords:

Nuclear Weapons Use

Electromagnetic Pulse Effects

Nuclear Terrorism

Collapse of a Nuclear Weapons State

Nuclear Iran

1.10 Priority Strategic Topics

START Process: Preparing for the next step(s)

Ensuring Predictability and Flexibility

Missile Defense Cooperation

Addressing Conventional Global Strike/Non-Nuclear Strategic Arms Control

Addressing Total Inventories (Stockpile/NSNW)

Verification Mechanisms/Technologies for RVs/Warheads

Attribution and Posture Options at Low Numbers of Nuclear Weapons

Interim CSBMs and Transparency Measures as Shaping Tools

Public Diplomacy: Bridging the Disarmament Community (focus on last round and far future state) and Security Community (current status and next round focus)

Multilateralizing Strategic Engagement and Arms Control

Strategic Stability: New Concepts/Conceptualizations for New Environments

Comparative Strategic Perspectives and Strategic Stability Redefined

Offense/Defense Balance/Tradeoffs and Global/Regional Strategic Stability

Conventional/Nuclear Balance/Tradeoffs and Global/Regional Strategic Stability

Verification of Armament (vs Traditional Verification of Disarmament)

Regional Instability and Limited Nuclear Conflict

Deterrence Today and Tomorrow: Redefined/Eventually Reduced in Centrality

How Disengage from Extended Nuclear Deterrence toward Sole Purpose Nuclear Posture

How Disengage from Nuclear Core/Sole Purpose Deterrence

Hedging Strategies for Very Low Nuclear Numbers/Zero Nuclear Weapons

Conventional/Nuclear Tradespace for Strategy and Targeting

Reducing the Role and Salience of Nuclear Weapons in US/Global Perspectives

USAF Strategic Issues

Measuring Effectiveness of Organize/Train/and Equip against Target-Based Strategies and against Deterrence-Based Strategies

Roadmap for Each Element of Traditional Strategic TRIAD/New Strategic TRIAD

Creating and Sustaining a Force that Embraces Strategic Knowledge and Perspective

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/Multipolarity: 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
- Emerging Powers
- Role of Military Alliances
- Role of Global and Regional Institutions and Processes
- Interoperability with Potential Allies
- Building Partner Capacity
- Regional Engagement
- Regional Military/Strategic Balance
- Global Leadership Challenges
- Military Alliances vs Military Partnerships

2.2 Global Economy: As globalization has increased the interdependencies between nations' economies, how does this present opportunities and challenges for national security? How does disruption in the global economy create risk? What are the impacts to defense industry, military spending and military readiness? What are the new characteristics of national security economics and state stability?

Subtopics/Keywords:

- Financial Crisis/Instability
- Military Spending/Resources
- Economic Reliance/Economic Warfare
- Economic Development Models/Expeditionary Economics
- Currency Regimes/Competition
- Technology Transfer/Controls
- Economic Blocs/Resource Competition
- Regional Stability and Instability/Associations
- Flashpoints in Vulnerable Regions
- Regional/Inter-Regional Partnerships
- Foreign Military Sales: Risks vs. Benefits
- Competitiveness of US Defense Industry

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

Subtopics/Keywords:

- Science and Technology Investment
- Technology Leadership/Partnership
- Technology and Resource Substitution
- Intellectual Property
- Innovation and Discovery
- DoD Acquisition Policies
- Technology Life Cycles
- Technology Resourcing/R&D Funding
- Emerging Technologies
- Non-Lethal/Reduced Lethality Military Technologies
- Foreign Military Sales
- Technology Transfers/Diffusion/Controls
- Human Capabilities/Infrastructure/STEM

2.4 Global Communication: How has the continuing information “revolution” and increasing reliance on information technology presented national security challenges and vulnerabilities? Examine how technologies and international actors exploiting technologies present viable challenges and threats. How do states and non-state actors 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 Multipliers
- Comparative Technological Advantages
- Privacy/Security
- Strategic Communication
- Technology Resourcing and Policy

2.5 Culture/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.

Subtopics/Keywords:

- Nationalism
- Ethnicity
- Perceived Deprivation and Drivers of Identity Radicalization/Extremism
- Human Rights/Human Security
- Stabilization Assessment
- Democratization/State-Building

- Partnership during Political Transition
- Counterinsurgency/Counterterrorism
- Strategic Communication
- Human Terrain Analysis
- Political Affairs Specialists/Regional Area Specialists
- Professional Military Education
- Military Training

2.6 Violent Non-State Actors/Violent Extremist Organizations: It is a long-standing tenet of insurgency and counterinsurgency that one must first fully understand the rationale, objectives, organization, and dynamics of the insurgency before an effective counterinsurgency strategy can be crafted. This is a universal truth across terrorism, insurgency, and other types of non-state conflict. Analyze the roots and manifestations of violent non-state actors/violent extremist organizations and craft appropriate and tailored US and allied government responses.

Subtopics/Keywords:

- Terrorism/Counterterrorism
- Insurgency/Counterinsurgency
- Piracy/Transnational Criminal Organizations/Illicit Trafficking
- Organizational Dynamics/Leadership
- Recruitment/Transition to Violence
- Finance and Logistics
- Lifecycle/End Phase Manipulation
- Coercion/Deterrence of Terrorism
- Legal and Law Enforcement
- Intelligence
- Interagency/International Cooperation

2.7 Human Security: Human security is an emerging concept and driver of conflict and policy responses across the developing world. Specify and analyze DoD roles in protecting and promoting human security.

Subtopics/Keywords:

- Doctrine of Responsibility to Protect
- Genocide
- Pandemics
- Disaster Response
- Global Warming
- Humanitarian Operations
- Allies Policies and Activities
- DoD Role(s) and Responsibilities
- Mission Assessment

2.8 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:

COCOM Structures and AORs/Other Agency Structures and AORs
AFRICOM/SOUTHCOM Models
Cultural Sensitivity/Understanding
Leadership and Institution Building
Regional Affairs Officers/Political Military Affairs Officers
Humanitarian Relief Operations
“Militarization” of US Foreign Policy
Civil-Military Relations/Cooperation

2.9 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 result in national decline and global instability? Develop these issues and assess options to minimize impacts on DoD.

Subtopics/Keywords:

Resource Competition
Aging/Youth Bulges
Gender Imbalance
Urbanization
Regional Instability
Migration/Diaspora Dynamics
Identity Politics
Pandemics
Rural-Urban Divide

2.10 Priority Emerging Issues

“Arab Spring” and Sweeping Popular Movements
Role(s) for United States in Middle East/Southwest Asia after Withdrawal of Combat Forces from Iraq and Afghanistan
Access and Basing Issues (Global/Regional)
Balancing against Perceived Decline in US Power
Strategies for Dealing with Violent Extremist Organizations and radicalism
Creating and Sustaining a Force that Embraces Strategic Knowledge and Perspective in Balance with Knowledge and Perspective for Emerging Issues

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. Researchers are also encouraged to develop proposals that cross-cut one or more topics/subtopics to better examine systems interactions, e.g. human-environment, energy-water-food security nexus, that may not be obvious by focusing only on one topic/subtopic in isolation. Relevant policy gaps, potential solutions, and military implications should be identified.

Note also that energy/resource geopolitics and climate change cut across the other topics.

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? How can climate change adaptation provide a vehicle for engaging emerging powers?

Subtopics/Keywords:

- Adaptation/Resilience/Mitigation
- Legitimacy
- Water Security/Food Security
- Migration
- Pandemics
- Polar Security
- Climate Engineering
- CO2 Entrapment
- Desertification
- Natural Disasters
- Marine Ecosystems/Fisheries

3.2 Energy Security: 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 and partner nation militaries promote energy security?

Subtopics/Keywords:

- Operational Energy/Tactical Fuels Reduction
- Critical Energy Infrastructure
- Energy Efficiency
- Energy-Water-Food Security Nexus
- Alternative Sources
- Renewable/Clean Sources
- Nuclear Energy
- Emissions Regulations/Carbon Footprints
- Interagency/International Partnerships
- Energy Chokepoints/Pipeline and Transit Issues

3.3 Critical Natural Resources: How do natural resources dependencies influence United States national security interests? Does mapping the terrestrial and marine sources of critical defense resources indicate security challenges for the United States? How do dependencies on critical natural resources impact United States and other nations' force development? What are the associated environmental pollution problems associated with the extraction and processing of critical natural resources? How can the United States meet future demands while reducing the environmental footprint of rare earth elements needed for green technologies and information technology devices?

Subtopics/Keywords:

- Resource Geopolitics
- Energy-Water-Food Security Nexus
- Ecosystem Services/Biodiversity
- Sustainable Practices
- Rare Earth Elements/Processing
- Defense Critical Resources
- Deep Sea Mining
- Marine Ecosystems/Fisheries

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? How might a systems approach provide added insight into security relationships associated with different resources that may not be as readily apparent when analyzed in isolation?

Subtopics/Keywords:

- Resource Geopolitics
- Climate Change
- Scarcity/Abundance
- Renewable/Non-Renewable Resources
- Fresh Water Security
- Marine Ecosystems/Fisheries
- Transnational Effects
- Piracy/Crime
- Riparian/Transit Issues
- Sustainable Development

3.5 Regional Cooperation: Do global and regional actor views of resource, environmental, and energy security offer opportunities for United States 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 combatant command programs to further that cooperation. How might complex environmental disasters expand mil-to-mil resilience training and development of comprehensive international frameworks for response to major natural and anthropogenic disasters?

Subtopics/Keywords:

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

Global/Regional Cooperation/Institutions
Response to Mega-Natural Disasters

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? What are the best practices to assist to alleviate fragility?

Subtopics/Keywords:

Climate Change
Root Causes of Instability
Environmental Factors/Dynamics
Degradation/Depletion/Scarcity
Demographic Impacts
Natural Disasters/Anthropogenic Disasters
Water/Sanitation/Health Infrastructure
Energy Resources/Infrastructure/Geospatial Tools/Modeling/Indices
Capacity Building/Resilience

3.7 Pandemics: What is the role of emerging/resurgent diseases and pandemics as a challenge to national security and to force protection? What are the implications for military leadership? What military roles are possible/appropriate in responding to a pandemic? What are the benefits and challenges for participation in the development of foreign military disease surveillance capacity?

Subtopics/Keywords:

Climate Change
Emerging Diseases
Transmission/Prevention
HIV/AIDS
Flu Strains
Waterborne
Operational Vulnerabilities
Military Readiness/Sustainable Operations
Health Communication

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. An important focus is developing solutions for the problems at hand, without creating new problems as a result. How can the military work with other stakeholders to plan more sustainably, efficiently, and effectively given the economic, environmental, and climatic related stresses to be faced over the next several decades?

Subtopics/Keywords:

Net Zero Energy/Water/Waste
Operational Energy
Green Chemistry/Safer Chemicals
Construction/Procurement
Clean Energy
Sustainable Supply Chain Management

Nanotechnology
Biotechnology
Space-based Solar Power
Water Supplier Risk Assessment
Desalinization
Deep-Sea Operations
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, energy, and sustainability factors into its operational planning with emphasis on the cultural and education dimensions of institution building. What policy and investment is needed to advance operational capabilities to extend endurance, increase resilience, and reduce costs in a sustainable manner?

Subtopics/Keywords:

Operational Energy/Tactical Fuels Reduction
Environmental Information and Intelligence (E2I)
Sustainability Planning/Practices
Zero-Footprint Base Camps/
Net Zero Energy/Water/Waste
Solid/Hazardous Waste Management
Post-Conflict Footprint
DOTMPLF: Doctrine/Organization/Training/Material/Personnel/Leadership/Facilities

3.10 National Security Planning: The United States security policy and planning process provides overall mission guidance for military Services and operational commands, and an interactive forum for functional communication and coordination. As environment, energy, and sustainability rise to visible levels of impact on all facets of military operations, what places and roles should they play in this strategic-level process? Where should environmental and energy security, and sustainability guidance be introduced, and with what priority? What impact will an increased emphasis on human security and global sustainability by other nations have on future United States security planning?

Subtopics/Keywords:

National Security Strategy
National Defense Strategy
Quadrennial Defense Review
Campaign Plans
Theater Security Cooperation
Disaster Preparedness/Humanitarian Assistance
Whole of Government Implications
China's Five-Year Plan

Priority Topics: The environmental security and sustainability topics for FY12 are listed above in general priority order.

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 enduring, changing, and 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 facilitate moving DoD from old ways of thinking to best postures for future scenarios? What types of conflict will resemble previous conflicts, which will be employed simultaneously, and where are new battle grounds emerging? Identify and analyze emerging technologies and their potential influence on future conflict.

Subtopics/Keywords:

- Spectrum of Conflict/Redefining Warfare
- Emerging Technologies for War
- Unrestricted Warfare
- Counterinsurgency/Limited Warfare
- Hybrid Warfare
- Irregular Warfare
- Resource Warfare
- Economic Warfare
- Ethnic Conflict
- Cultural/Religious Conflicts
- Failed States/Civil War
- Humanitarian Assistance Missions
- Cyber Warfare
- Information Warfare
- Environmental Warfare
- Emerging/Resurgent Regional Strategic Adversaries
- COCOM Structure
- Changes in Force Structure/Resources
- Asymmetric Coalitions
- Resolving Frozen Conflicts

4.2 Priority Air/Space/Cyber Issues

- Balancing Strategic, Regional, Sub-Regional, and Non-State Requirements and Capabilities
- Reducing the Salience/Stigmatizing Space Conflict/ASAT Attack and Cyber Attack
- Emerging Technologies, Directed Energy, Robotics, and Warfare
- Enhancing Precision and Damage Limitation
- Creating and Sustaining a Force that Embraces Strategic Knowledge and Perspective in Balance with Knowledge and Perspective for Full-Spectrum Conflict