



DEPARTMENT OF DEFENSE
NATIONAL DEFENSE UNIVERSITY
WASHINGTON DC 20319-5066

MEMORANDUM FOR DIRECTOR, THE JOINT STAFF J-7, WASHINGTON, DC 20318

SUBJECT: PME Future

1. The rapid and profound changes in the character of war require NDU to examine both near-term and longer-term strategies to achieve the JF2030 vision for a Joint Force designed and able to out-think any adversary under conditions of disruptive change. Understanding the changing character of war is a necessary requirement to be able to out-think an adversary. NDU is taking steps for near-term curriculum adjustments while simultaneously looking at a longer view to support the cultural change required for JF2030.
2. The National Defense Strategy clearly frames the reemergence of long-term, great power strategic competition in an increasingly complex global security environment by overt challenges to the free and open international order. NDU graduates must lead and thrive in this evolving world of globalization with its disruptive technology and persistent, pervasive borderless communications, and meet the ever-present threat of global terrorism and rising nation-state competitors while “ensuring we uphold not just minimum legal standards, but the highest degree of honor our Nation and our military are known for around the world.”
3. The NDS also recognizes the complex nature of our security environment. This “long-term strategic competition requires the seamless integration of multiple elements of national power—diplomacy, information, economics, finance, intelligence, law enforcement, and the military.” This demands a rigorous, integrated educational curriculum, essential to “combined actions with the U.S. interagency to employ all dimensions of national power.” NDU’s whole-of-university program and curriculum focuses on three core elements: Strategic Thinking and Leadership, Ethics, and Strategic Emerging and Disruptive Technology Leadership.

To accomplish this mission in the near term—for Academic Year 2019-20, NDU has three specific initiatives:

- a. Produce Future Strategic Senior Leaders: Consistently produce ethically focused graduates with an integrated perspective of the defense enterprise who will be ready to succeed in strategic leadership as general and flag officers (or civilian equivalent) within five to ten years after graduation, in the joint warfighting, interagency community, and international partners that NDU serves. Future strategic leaders must adopt a competitive, adversary-oriented approach to the ever-changing character of conflict and security.
- b. Develop a university-wide ethics leadership curriculum: Ensure that all graduates of NDU are equipped to make informed, ethical decisions in an environment far more diverse and more complicated than current conditions. The Secretary of Defense was clear: “Ethics transcends our three lines of effort. Admired leaders who coach and inspire self-disciplined teams strengthen readiness and lethality. Trust is the foundation of attracting and strengthening alliances and the confidence of the American people.”

c. Develop a university-wide emerging and disruptive technology leadership curriculum: Prepare future leaders to understand that information, technology and innovation are strategic elements of warfighting, statecraft and communication. Ensure the continued U.S. defense technological advantage by addressing changes in industry cultures, investment sources, and the need for protection across the National Security Innovation Base.

4. For the long-term—AY 2020 and beyond, NDU will look to transform its current programs to meet the challenges faced by answering three essential strategic questions:

- What are we to teach in this dynamic environment?
- How Do We Teach to Ensure Effective Learning Outcomes?
- How Do We Support and Organize to Meet the Challenge of Delivering Professional Military Education?

Strategic Initiative 1: What are we to teach in this dynamic environment?

The National Security Strategy (NSS) and National Defense Strategy (NDS) define the complex and continuously developing challenges confronting the nation and its allies. From traditional state-based competition to unconventional threats like terrorism, transnational crime, and counterinsurgency, to emerging new threats such as in the cyber and information environment, NDU's future students will have to wrestle with complex, globalized problems: none of these challenges can be solved by any one nation alone.

NDU's educational program and research efforts must provide key support to the joint warfighter, the interagency, and our partner and allied nations. The University currently has a mix of programs and course content that meets some but not all of the requirements for going forward, so we must set out to first identify what our graduates need to be taught in order for them to think about the world they will face in different ways. NDU's core mission of ensuring that our graduates are able to advise and lead at the strategic level in a future featuring complex, global-scale, multi-domain challenges requires a clear curricular program. Addressing such "wicked problems" will demand the successful integration of the nation's full suite of tools. Graduates will also have to be able to work with partners who are not US or allied government officials – such as industry, non-governmental organizations, and civil society. Reality in the near future is that the military is unlikely to have a monopoly on strategic effects, or to be capable of wielding all tools of statecraft. The need to be successful in the Joint, Interagency, Intergovernmental, and Multinational (JIIM) world is fundamental.

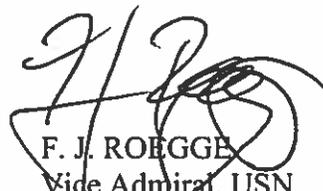
Strategic Initiative 2: How Do We Teach to Ensure Effective Learning Outcomes?

Once we understand what we need to teach, we must address how we will teach our students as they will have different needs and ways to process information than those who have preceded them. NDU students of the next five years will be drawn from "Millennials" or "Generation Ys:" the first globalized generation, having come of age during the rapid growth of immediate and borderless communications and a pervasive presence of global terrorism. Having never known a world without cellular and Internet connectivity, they are among the most resilient in navigating change. They are highly educated, and already have an appreciation for

diversity and inclusion. They also represent the most networked generation ever as they have grown up at a time where relationships are easily established and nurtured on-line and not in person. As a reflection of both the generation and global engagement requirements, NDU can expect more international students seeking to attend who will represent a more diverse group of partner countries. We must develop a set of methods, tools, professional development, and personnel that leverages what talent and resources we possess today and lead to a culture of constant improvement in how our courses are taught.

Strategic Initiative 3: How Do We Support and Organize to Meet the Challenge of Delivering Professional Military Education?

It is important for NDU to continuously examine and implement reforms of administrative processes that focus on the life cycle of a student, faculty, or staff member rather than on the individual administrative functions themselves. The process of the academic environment at NDU is compressed, complex and difficult to manage – largely because of the short length of the academic cycle. Students, faculty and staff are required to learn and execute academic administrative processes that are in addition to any associated with current assignments. Finally, NDU needs to assess its current organizational structure and determine options to assure that it can deliver highly successful graduates. Our current structure has some strengths we intend to build on and a number of weaknesses that we must address. This part of the effort will no doubt be the most difficult, as it involves taking a hard look at where we are, which is in many ways identical to how we have been organized for decades and in other ways quite apart from what we can now see as our core strengths. Within our constraints, we must look to optimize what we teach, how we teach it, and how we are organized to support that effort structurally at every level so that NDU becomes the unquestioned leader in developing joint strategic leaders.



F. J. ROEGGE
Vice Admiral, USN
16th President

Attachments:

CIC, ES, NWC, CISA, JFSC Input Papers

CIC Input to NDU Comments on Wilhelm Report

The overall CIC view of the Wilhelm Report is positive, but we do see a few gaps worth addressing. Before addressing the report on a point-by-point basis, we would like to make those broad points:

- A. It is very important to separate the Operational level of education (JPME I) from the Strategic level (JPME II). Blending them does a disservice to both. By the time a student is selected for JPME II, he or she should be presumed competent at the operational level of warfare, allowing the ten months available for JPME II to be applied to making the qualitative (vice quantitative) changes in students' strategic thinking, leading, and, for subject-matter-specific war colleges, domain or instrument expertise.
- B. There is a deep, continuing tension between a narrow, mechanistic view of JPME II and a broader intellectual approach. In the past, the former has been dominant, with a checklist framework and an impatience for topics beyond joint doctrine and the joint planning process. To the extent that the Secretary and the Chairman are dissatisfied with JPME II, it may be profitable to explore ways to reduce this tension. One option is to pursue the current move toward outcome-based education already underway in the J7. Properly instantiated, it could preserve the J7's oversight role while reducing counterproductive micromanagement. Another option would be to sever JPME from War College education, requiring students to take a three-month course on exclusively joint topics at each stage of his or her career (tactical, operational, strategic, and policy). This would allow the J7 to optimize a program for its agenda, while allowing the Services to meet their requirements. The remaining gap—the higher level of joint education, providing a broad education across the Services—could be met by something closer to the Secretary's vision for true Military Education formulated and overseen by the Secretariat. A third option, splitting the difference between the first two, would be a broader conception of strategic-level education for national security professionals that meets minimum J7 standards, but which is expected to also meet higher intellectual and academic standards. This would require a culture shift within the J7, but is not outside the realm of the possible.
- C. The pilot program for strategic thinkers, to be hosted at John Hopkins University, will provide a model for all of strategic-level JPME. To the extent that that program is qualitatively different from the current JPME model, it will offer useful options for the J7 to consider if it intends to make more than marginal changes to JPME II.
- D. More than any other country, the United States educates its officers—it does not settle for merely training them. The 'education float' built into officers' career progression attracts, retains, and makes best use of officers who do not see thinking and fighting as antithetical pursuits. We believe this is one of our competitive advantages—from our perspective, our most important advantage—and should be further refined, updated, and sharpened in order to prevent, or prevail in, future wars.

Point-by-Point Comments

1. **Strategic and Operational Blocking and Tackling.** We believe that there must be a common core of strategic concepts clearly understood not just among joint warfighters,

but among leaders and advisers throughout the national security enterprise. While there is a need for additional specialization, this should not take the place of a strong strategic foundation. This is necessary for two reasons: first, to provide ‘intellectual interoperability’ between graduates of our various programs, and second, to elevate the more specialized elements of our programs to the strategic level. A ‘strategic foundation’ may be narrowly understood as a vertically-integrated understanding of strategy from the policy level to strategic models to operational design to joint planning. More broadly conceived, we see the skills required for operating effectively at the strategic level as falling into three interrelated categories: thinking and communicating, strategy and planning, and leadership and ethics. This is the foundation which should be provided by all schools charged with producing strategic thinkers, advisers, and leaders.

2. **Offense vs. Defense.** We agree that casualty aversion is the default setting for policy makers and democratic populations—in the absence of a clearly articulated strategy that identifies vital ends, effective ways, and sufficient means. When this strategic and informational challenge is met, free societies have proven themselves more committed and more resilient than their less free, less well-informed adversaries. We believe this is a crucial element of the information instrument of national power.

3. **Ethics and Integrity.** While we agree with the Secretary and the Chairman that we are not facing a ‘crisis of ethics,’ we do believe there is a need for a coherent, thorough grounding in ethical theory and practice for War College graduates. This applies not just to the graduates’ own behavior, as important as that is, but to their ability to frame narratives on a moral, ethical, and legal foundation of widely-accepted principles that is an asymmetrical advantage of our country and our like-minded partners. In addition, the study of the ethical approaches of competitors and adversaries is needed to ensure that our graduates understand how to defend against enemy actions targeting ethical seams and to exploit enemy ethical and moral weaknesses.

4. **Globalize the JOM.** We agree that global integration is required to address the no-longer-regional nature of potential conflicts. The Chairman’s excellent example of a war in Korea captures our thinking on this. He explained that his first call would be to NORTHCOM, to make sure our missile defense were in order. His next call would be to STRATCOM, to confirm that our nuclear deterrent is “holding at risk that which the enemy hold most dear.” His next call would be to EUCOM to ensure that the flow of forces away from that theater would not encourage an opportunistic power to take provocative actions. His next call would be to CYBERCOM, to make sure that our critical infrastructure defenses are secure, and that our capabilities to launch offensive strategic operations in cyberspace are ready. He would then call INDOPACOM, to confirm that our allies would be protected and that our freedom of maneuver in the theater is guaranteed. Finally, he said, he would call USFK, and that within the new globally-integrated plan for war on the Korean peninsula, forces began to flow to the combatant commander directly engaged with the enemy. The development of cheap, accessible, and effective information technology means that modern warfare can no longer be easily contained within regions. Students must possess a deeper appreciation of

global capabilities, such as cyber and information, and a more sophisticated and responsive ability to integrate them for a global fight against a regional adversary.

5. **Extend Cultural Horizons.** We strongly believe that the joint warfighter would be served by a broader view of the complexities of modern conflict, and by a stronger, richer connection with partners throughout the national security interagency. Even more so, there is a need to build on already excellent cultural connections with our Five Eyes allies while reaching out to NATO, IndoPacific, and MENA allies and partners. We would benefit from the richness of this educational environment—we would learn about our friends, they would learn about us, and we would begin in a schoolhouse the process of building the trust that will one day be needed between very different cultures on the battlefield. One caution is that the classification issues noted in paragraph 4 are very real and they amplified in a JPME classroom. If the JPME enterprise is going to seriously contribute to expanding cultural horizons, there needs to be senior leadership involvement in fixing classification issues.

6. **The Sixth Domain.** While we do not believe that domains should be indefinitely created to encompass each new military innovation, we strongly concur that a “cognitive domain,” even if not codified in joint doctrine, has always existed—whether it is called the Information Instrument of National Power, Information as a Joint Function, or the Information Environment. The complexity of this field requires the lead War College in this area to assume thought leadership in exploring and clarifying the many dimensions of Information in the national security context. While we believe the DoD is a critical partner in this, a point of caution should be about the belief of playing a “dominant role” in this “domain.” To do so will require some serious reflection on the role of the military in society and the governance of society. The political factors that will come into play has not been a strength of the military because professionalism has been seen as a separation from understanding politics.

7. **Outcomes vs. Consequences.** We concur that a gray area of poor understanding of legal and policy restrictions on the use of force limits our operational commanders and strategic leaders far more than it does an unprincipled enemy. Clarity provided through operationally relevant, academically rigorous strategic education will limit this gray area to zones of irreducible ambiguity, and provides commanders greater confidence in the range of activities that are technologically possible, legally permissible, and politically preferable. It should be noted that much of what General Wilhelm complains about is part of a political process and are of political concerns—which are completely legitimate since war is politics be other means. Near-peer adversaries will also use information warfare in future conflicts—large or small—so these restraints will remain in place to win in the cognitive domain. Understanding how to effectively operate in this restrained environment is a critical outcome for any War College graduate.

8. **Art v. Science.** We concur that as a leader rises to the strategic level, his or her education must deal more and more with strategic art and less and less with strategic science. While competence in the mechanics of strategy is an absolute prerequisite to strategic

leadership, it must be viewed as a necessary floor, not an aspirational ceiling. Military leaders chosen for War College come with two decades of military experience; what is most needed is to build on that to raise and broaden their understanding so they are able to evaluate, integrate, and apply many different strategic lenses in order to think, advise, and lead effectively at that level.

9. **Decisiveness vs. Incrementalism.** While we agree that individual genius is rare and difficult to develop programmatically, a higher level of general strategic competence—both academic and operational—is both feasible and necessary. War Colleges are the place to explore without danger, experiment without (serious) consequence, and to intellectually prepare for the strategic challenges which lie ahead. To develop a “chorus of military professionals,” two specific points seem most important: first is the Secretary’s quoting of Einstein that the right way to address a problem is to spend 90% of the time defining it, then 10% of the time solving it. Second, lessons in literature, from the *Gallic Wars* to *Ender’s Game*, provide priceless examples of leaders who see the bigger picture and are victorious because they do not see thought and action as antithetical. For that chorus to have credibility, it means the War College curriculum must evolve way from all of the current operational-level JPME topics and a new set of strategic topics must be developed.
10. **Evolving the JOM.** We agree that there is a need to connect a clear understanding of legal and policy authorities with lessons learned from recent conflict—including ongoing operations against the United States by adversaries that employ the D, I, and E more than the M. We further agree that the greatest value of this understanding will be prior to conflict, when interservice, interagency, and international connections can be made and exercised before they are required in battle.
11. **Up and Out Thinking.** We agree that the rationale of down-and-in practical education must be balanced by a greater proportion of up-and-out thinking, whether it is a global perspective to replace regional parochialism, an understanding of the other nonmilitary instruments of national power, or an appreciation for the tremendous overlap in national interests among all countries confronting the 2+3. The limit on this thinking is not the intellectual capacity of the dedicated, intelligent officers sent to War Colleges, but rather the self-imposed constraints on curriculum and teaching methodology that optimize delivery of a narrow capability at the expense of a broader understanding. If we are serious about producing graduates who possess the intellectual strength to do this, it will require more time in the ten-month curriculum and it means other things must be removed or reduced in scope in order to make room and to provide students time for thoughtful reflection.
12. **Operationalizing the Information Environment.** This recommendation in the Wilhelm report is custom-made for CIC, and we believe it is essential that our faculty and students tackle this challenge head-on. There is a rich and mature understanding of the other domains of warfare, and even of the other instruments of national power, but Information, in all its doctrinal complexity, remains intellectually elusive for the United States, and particularly those charged with her defense. CIC can and must be a leading partner in

defining this new environment, pushing intellectual limits while delivering the clarity that is needed to plan for and execute war at the strategic level. More than any other element in our strategic universe, Information transcends traditional compartments of thought and habits of action. Working with others to build a clearer understanding of this field, and then performing the disciplined work needed to connect it to operational reality through education, research, and education, is, or should be, the primary reason for CIC's existence.

Eisenhower School - The Professional Military Education (PME) Way Ahead

Fulfill Statutory Requirements

Joint PME must fulfill the mandatory JPME requirements as stated in US Code Title 10. The specific requirements depend upon whether it is a JPME Phase 1 or JPME Phase 2 program. For Senior Level Colleges (SLC's), only fulfilling the four Phase 2 topics as stated in 10 USC Section 2155) should be required. Specifically, those topics are: (1) National security strategy; (2) Theater strategy and campaigning; (3) Joint planning processes and systems; and (4) Joint, interagency, and multinational capabilities and the integration of those capabilities. Given that all US Military officers attending SLC are required to have first completed an Intermediate Level College (ILC), requiring the SLC's to also fulfill the Phase 1 requirements (10 USC Section 2151) is an inefficient use of valuable curriculum time.

Focus on the Art and Science of Warfighting

In conjunction with fulfilling statutory requirements, the art and science of warfighting needs to receive an increased level of attention in JPME programs. While an appreciation of all instruments of power (Diplomatic, Information, Military, and Economic) ought to be developed, expertise in the military dimension must be advanced. Besides the military dimension, it is also important for future leaders to recognize the critical impact of economic statecraft and how the USG exercises that particular instrument of power. As a joint program, warfare concepts pertaining to the different domains (air, land, maritime, space, cyber) have to be understood. As such, with an appreciation of history, our students need to understand the evolving and ever changing types of warfare, and the complexity inherent in all domain warfare. Since it is important for future leaders to recognize different types of war, it is critical that we have a curriculum that is agile and continually adapted to reflect changing forms of warfare. For example, the movement to Globally Integrated Operations needs to be fully understood as a new approach to warfighting.

Align to current strategic documents

Given the current strategic environment and return to great power competition, our curriculum must be aligned to the current National Security Strategy (NSS) and National Defense Strategy (NDS). With that focus, we ought to increase coverage and research on topics pertaining to China and Russia, particularly as it relates to developing an enhanced understanding of 21st century strategic competition and achieving asymmetric advantages. Each of the three lines of effort stated in the NDS ought to be fully embedded in JPME curriculum, with attention placed on achieving advantage over competitors:

- Build a more Lethal Force
- Strengthen Alliances and Attract New Partners
- Reform the Department for Greater Performance and Affordability

Develop strategic and futuristic thinking

Our students need to be able to look beyond the current NSS and NDS, and envision strategies for potential future environments. The ability to think critically and strategically about the current environment is important, but equally important is developing strategic thinkers who can imagine different future scenarios and develop strategies for uncertain future environments. In

doing so, strategic leaders need to be able to consider both the pros and cons of the current NSS and NDS, understand where the world may be heading, envision the environment after next, and develop long-term strategies that favorably position the US to achieve national interests.

Expand the understanding of disruptive technologies and innovation

While meeting USC Title 10 requirements and aligning to the NSS/NDS, we must be agile and incorporate curriculum changes at an increasingly accelerated rate of change. Senior leaders ought to have a fundamental understanding of technologies that will drive strategic advantage in warfare. In doing so, they are required to understand how to partner with industry and develop needed capabilities. Moreover, future leaders must be able to create a strong culture of innovation within DoD, and partner with the commercial innovation base to develop essential warfighting capabilities and achieve asymmetric advantages.

Employ 21st century learning capabilities

During periods of dynamic change, a variety of active and experiential methods ought to be used to optimize learning. Enhancing the use and understanding of emerging analytic capabilities is needed, as well as methods that foster greater critical thinking, creativity, and collaboration. The case study method is an effective means of enhancing active learning, which should be expanded in many areas of curriculum. In addition to case studies, other means of learning that should be considered for use throughout our academic program include - ebooks, virtual learning, apps, distributed learning, social collaboration, war gaming, and simulation.

Maintain the unique nature of individual programs

Each SLC has a unique focus, which should be maintained. While all SLCs need to meet mandatory statutory requirements, each individual program ought to remain focused on their unique mission areas. JPME should not move to a “one size fits all” construct. Individual programs ought to be maintained, since each develops a needed expertise in different areas of strategic importance.

Upgrade to a classified infrastructure

In order to teach a sophisticated curriculum in alignment with the NSS and NDS, classified facilities and communications are required. Funding needs to be provided in order to provide the needed infrastructure upgrades in order to teach in a classified environment. Additionally, funding must be provided in order to obtain the requisite security clearances for faculty members.

Precise assignment of international fellows

In line with the NDS line of effort to “Strengthen Alliances and Attract New Partners,” International fellows ought to be allocated to schools based on individual school missions and focus areas. For example, rather than assigning international fellows to the Eisenhower School from countries with no industrial capabilities, priority ought to be given to students from countries that are working with the US to develop and produce needed capabilities.

Improve Talent Management

In order to offer a sophisticated academic program focused on topics embedded in the NSS and NDS, it is essential to identify needed core competencies of faculty members, especially in the

areas of strategy, emerging technologies, and industry. Moreover, it is important to attract, hire, and retain well qualified faculty in sufficient numbers that are not only capable of designing and offering curriculum focused on critical topics today, but are also sufficiently adaptable and capable of designing and offering curriculum focused on topics in the future. In addition to improving and evolving the curriculum by properly staffing the college with a sufficient number of well qualified faculty members, a greater amount of time could be devoted by faculty to research on topics of interest to DoD and key stakeholders. Likewise, faculty resources could be leveraged in collaborative partnerships across the DoD PME establishment and civilian universities, thereby expanding our capabilities to provide best in class learning experiences. Besides faculty talent management, greater focus and attention also needs to be given to student talent management. Working with the Military Services, incoming students ought to be more thoroughly screened to ensure that they have the aptitude and ability to complete a sophisticated program of study. As such, enhanced admissions requirements and assessments could be used to better identify well qualified students. While in school, greater focus should be given to talent identification, so those students that are particularly well suited for critical positions can be identified early enough to influence the assignment process.

NWC MECC Paper

The MECC Team will meet on October 30 to discuss how PME keeps pace with rapid and profound changes in the character of warfare. We have been asked to provide thoughts on the PME way ahead with the goal of providing input into the Chairman's PME Guidance.

Executive Summary: The Secretary and Chairman's current strategic approach highlights the need to build a more lethal force as well as strengthen alliances and attract new partners as we consider how to compete, deter and win in a competitive environment involving new technologies and new concepts of warfare and competition (2018 NDS). Responsible for educating rather than simply training, the Senior Service Colleges (SSC) are unique in mission and in composition. Each contributes holistically to supporting the Secretary and Chairman's vision and should be regarded as a strength as reflected in the Chairman's PME guidance. At the SSC level, critical and creative thought for future strategic leaders should be a prime objective. NWC executes its mission through best practices such as use of the Socratic Method, "case study method" of analysis and critique, engaged interagency partners, active and ongoing self-evaluation of methods with a rigorous assessment of data to improve outcomes. The faculty and the student body are comprised of a proportional mix of the Services, the interagency, and international fellows as the basis of the institution's strength and are critical to achieving the mission.

Discussion: We began by asking ourselves what is the purpose of professional military education at the senior service college level? We argue it is to prepare senior officers to think – both independently and as part of larger institutions. While all Professional Military Education (PME) institutions must address the shortfalls in lethality observed by the Secretary and Chairman, the SSCs are uniquely positioned to address shortfalls in lethality from a strategic perspective: How the changing character of warfare affects the military instrument, and in turn, how changes to the military instrument are affecting national security. The Senior Service Colleges do not look the same given their specific missions in educating our military. The differences among the SSCs – different missions, and distinctive core competencies – is a boon to the nation as we wrestle with the complexities of understanding the implications of the changing character of warfare on U.S. and allied/partner national security. The SSCs' unique mix of students – U.S. and allied/partner military, intelligence professionals, and civilian national security professionals – enhance the institutions' ability to consider the lethality gap from a strategic perspective. Thus, while every PME institution must address the changing character of warfighting, the SSCs are uniquely positioned to support a balance between "outfighting" and "outthinking" competitors and adversaries. This balance across the SSCs should be strengthened by ensuring the SSCs work cohesively together to provide the full range of needed PME, informed by comparative advantage and tempered by sufficient convergence in the programs to ensure graduates can work together. At the SSC level, convergence comes from ensuring all graduates are capable of exercising critical and creative strategic thought. Ensuring the SSCs share a common focus can be strengthened by adopting a few core principles that acknowledge institutions' respective comparative advantages.

In the SSC spectrum, National War College is the closest thing to General Eisenhower's post-World War II version of a "College of National Security" that exists today. The best practice of forming future strategic-level military and civilian leaders together brings to life the rhetoric of

the “whole of government” approach in which leaders understand how to plan for and apply military force in concert with other instruments of power. NWC students are exposed on a frequent basis to senior interagency leaders who bring practical application and experience to the intellectual exploration of strategy. This broad exposure to the “real world” including, but not limited to, DOD that leaders must learn to navigate to be effective senior leaders provides a fulsome exploration of strategic options, ethics and leadership across the broadest possible horizon. NWC is building leaders and future colleagues/allies in other agencies and other nations as well who will be critical partners in supporting DOD’s mission and USG strategies. NWC’s adaptations to the changing security environment starts with adapting as much as possible to a changing student body, both in experience and in composition. PME as a whole should examine this issue. We need to ask ourselves – are we sending the right students to the right institutions? How is the military deciding who to send to PME? Are the Services and the Joint Staff in sync on this issue? At NWC, our students are fewer and the trend is away from traditional warfighter specialties, which has pushed us to think about needed adaptations to this changing student body. As highlighted by the Secretary of Defense, new concepts of warfare mandate that we take a wider approach to understanding warfighting domains and consider a broader definition of “warfighter.” Perhaps there should be some thought to whether and how it would be beneficial to have a greater mix of experience among the military students, with some younger “digital native” officers joining the student body.

NWC remains mindful that changes in the student bodies of all the SSCs could drive a homogenization of PME as a way of resolving what is in essence an imbalance in Service versus joint prioritization of students, or a mismatch of students experience/career trajectory. At NWC, we assume our students arrive having mastered the “science” of their respective professions, that is, they are trained in their warfighting specialties at a much earlier stage in their careers and have enormous potential to usefully apply their education. We aim to develop their mastery of the “art.” We ask our students to think about where, when, how and whether we fight.

While incorporating the complexities of using the military instrument in crisis and in war, NWC also asks future leaders to think through the strategic “bookends” of war fighting -- contain/compete/deter/prevent war and secure/convert the long term peace post war. Students must understand not only how we “do war” but how we “do peace.” In doing so, it is imperative to keep the study of national security strategy firmly focused on preparing students to engage in senior policy and strategy development using the full range of national instruments (the “DIME”) to achieve strategic advantage in competitive environments. Consistent with lessons learned from historical and contemporary case studies U.S. successes and failures are often dependent upon how to use the military instrument in conjunction with the D, I and E in order to accomplish political objectives. One well-documented lesson of the last two decades is that overreliance on military power as the primary instrument results in a restriction of strategic thought, and a loss of creativity and analytical capability, as well as inhibiting flexibility in adapting to rapidly changing events.

If NWC’s primary purpose is to educate and foster creative thought in students and future leaders of national security, then how do we get our (any) students to think? To support that learning process, the Socratic method grounding students firmly in context (past, present, future) exposes them to the different perspectives and viewpoints they will encounter and work amidst as senior leaders through a time proven teaching process. In a fast paced world with an ever increasing tempo, we need to focus on ways to instill creative thinking as a critical tool for dealing with rapidly evolving military and political challenges. Active critical analysis, discussion and

critique is essential to developing the necessary skills to devise and to dissect strategy. The “case method” is used as a tool to develop independent thought grounded in real-world scenarios.

With the changing student demographics and the continued escalation of strategic challenges, PME institutions must continue the robust practice of self-evaluation on an ongoing basis. NWC prioritizes regular assessment of curriculum, instructors, and teaching methods. This assessment cannot just be anecdotal, but based on the rigorous collection and use of data to refresh the strategic context.

A challenge for all PME institutions is managing the rapid pace of technological change. How can we ensure the regular inject of technical expertise into PME to keep up? This is an area ripe for collaboration among the SSCs. At the central level, leadership should assemble appropriate experts groups by leveraging industry and think tank collaborations who can work with the SSCs in an advisory capacity to update content and refresh faculty. This is an area where a mix with some younger students might also contribute to better understanding.

A challenge for leadership would be greater coordination/talent management between the Joint Staff, the Services and the SSCs. The Colleges are uniquely placed to help identify top students for recruitment into strategic level positions but there is much room for increased collaboration and coordination. This would contribute to a better match of skill sets and background knowledge of potential staff.

CISA thoughts on the future of PME

Intro: I focus here on Senior-Level colleges since that is NDU's role in the PME system, and I respond to the specific issues raised by DJ7 in his note to the team. The future of PME needs to wrestle with how to incorporate new domains into strategy, and how to integrate irregular and regular warfare concepts. JPME needs to connect to the pre-commissioning and initial entry education system, and to differentiate what our work should accomplish at each level. And our faculty and schools will need to adapt our programs, delivery modes, and individual faculty development (teaching, research, and service) to the changing needs of the incoming generation of students.

One: On adapting to the changing nature of war

The PME system has to address how new technologies shape and reshape warfare, conflict and competition. I would think every school has a role in thinking about this, but I would also look to CIC, Air War College, and Naval War College as particular experts on the topic.

We also have to work on how to integrate all domains into strategic planning. Information and cyber will pressure every PME school, and I would look to CIC and CISA to help sketch the parameters for the system on how to roll them into the mix – and how to expand our thinking to include integrating irregular strategy into traditional grand strategy thinking.

But more fundamentally, what is 'war' today? It's not really useful to say it is about irregular warfare (IW) vs. traditional grand strategy or conventional warfare (CW), especially since we mislabeled them all those years ago when we decided to treat the formalized, artificial world of state on state violence as the ideal, or norm – when, in fact, most of human history seems to be much more about what we call IW. Maybe we should explore terminology along the lines of something like 'unstructured competition' for IW, and 'structured (or formal) conflict' for CW? CISA is perfectly positioned to wrestle with this challenge, especially in light of legislative changes that shift OASD SO/LIC, our main stakeholder, from CT to IW, and to more strategic responsibilities for that office. PME system would benefit from directing CISA to be the lead element in thinking this through, under our DOD designation as the flagship for strategic thinking about IW.

Two: Future directions for PME topics

What should we teach in the PME world? I will focus on Senior-Level Schools since CISA is in that rank; I imagine the Staff College schools would have a slightly different takes since their responsibilities differ from the SLC colleges.

First off, we all need to remember that our students at the SLC level are products of a series of prior PME experiences, from pre-commissioning, to basic and career courses, ILE, and JPME-1 Staff schools.

As we assess what PME should be about, we need to recall that and study what students should learn at every level: modifying JPME-II schools without looking at the whole system, and where an officer SHOULD learn the topic under consideration, is a recipe for redundancy and failure. Second, recent and current senior officers who are JPME-II graduates went through the schoolhouse 20 years ago; have we already addressed perceived failings in program updates since they were in class? The PME system would benefit greatly from a careful scholarly study

of the evolution of its topics and teaching approaches 2000-present, so we would have a sense of where the system was at the time when emerging senior leaders went through the programs, and so we can have a sense of what we might want to address in CAPSTONE to make up for curricular gaps fifteen years ago. Seeking to ‘fix’ PME now for twenty-year-old gaps is not helpful – and such a study might help us better explain how the PME schools update and revise their programs to remain relevant to emerging strategic challenges – which is something that could inform a thoughtful, purposeful reform of the OPMEP and PME system now. Third, each institution in the system has a separate charter, and as long as the primary stakeholders still buy into that, largescale reorganization is wasted effort. If stakeholders are reimagining themselves and their relations to the schools, then reorganizing those schools makes sense. Barring a wholesale rejection of the PME system, big reorganization will not help us achieve our missions into the future.

These three points being made, there are three levels of ‘what do we teach’ that each school here has to deal with: system-wide PME requirements, NDU requirements, and their own mission-driven subject requirements.

PME level: the legislation. Is it still good guidance? Or is it time to ask Congress for some flexibility, or some targeted edits to the requirements – for instance, perhaps some of the topics need to be at Staff College level and below, and some should be put on the SLCs to execute? At the SLC level, all the colleges need to concentrate on DIME and multi-domain integration. Lethality is a variable construct, in that it is more important at the lower levels and only part of the whole strategic integration task at the SLC level of PME. Staff Colleges and the feeder education/training before that level must focus on addressing the lethality concerns of SECDEF. Strategy is bigger than that focus on making our forces more lethal.

NDU: Ethics and strategic leadership have to be invigorated and made a central part of the NDU experience. As key parts of a revised Phase I and Phase III, these should be the focus of a great deal more thinking and learning at all of the NDU schools. We vary widely in how we do it, and a set of university-wide learning objectives would clarify our missions in this regard, and focus our teaching of these topics.

The center for teaching and learning being launched at NDU is also a key component of PME excellence, in my view. New modes of teaching to reach new generations of students, new methods of Wargaming and exercises integrated into courses, and the like are key intellectual skillsets that we need NDU-wide.

Component level: For CISA, this is serving the strategic needs of OASD SO/LIC, USASOC/SWCS, and CENTCOM (APH), in addition to secondary responsibilities to our interagency partners (DHS and DOE in particular).

The future for CISA requires us to work closely with our primary stakeholders as they respond to changing missions and expectations from Congress and the SECDEF. Congress wants them to take on more Service-like responsibilities, and SECDEF wants them to help integrate US IW capabilities into our broader strategy – to enhance our capacity to deal with great power competition. The ASD’s office is expected to grow to handle this new set of responsibilities, and CISA must maintain close and integrated contact with them to understand their changing needs,

and to adapt our support to the office to handle their new roles. This means both significant changes to our curriculum, and a new, broader focus to our faculty research.

Three: Adapting our teaching to new challenges

Teaching methods and classroom management need to adapt as the expectations of the incoming students evolve over time. Is the seminar going to continue to be the best method for doing strategic education? Do lectures still engage the students and transmit the necessary lessons effectively? Where can case studies help to tease out key learning objectives? Is it smart to retool everything into case studies? I bet it will be a mix of seminar-like discussions, case studies, deep individual and group research tasks, and much more Wargaming at every level of game sophistication (from small-group tabletop exercise through massive, computer-managed simulations involving students from multiple PME institutions). Here is where NDU's new teaching and learning center is a key strategic tool to advance the work of NDU – any shift in teaching modes needs to be based on evidence, and the faculty will need help learning to incorporate new techniques as needed.

The PME system is built on the ten-month, residential experience, at both Staff College and SLC levels. This approach made tons of sense in 1903, and has been successful through the end of the Cold War and beyond, but does it still get the job done? If it does not (four things might challenge that assumption – OPTEMPO, changing officer career patterns, new officer personnel management rules coming into effect, and the needs of our international and interagency partners), do we have support from C, JCS and SECDEF to approach Congress for the legislative flexibility to test other modes that may be more effective for the force, and for the students, in the future? Several schools in the PME system have pilot program or limited legislative authority to conduct tests of delivery modes other than the standard ten-month cycle, and we should mine them all aggressively for assessment of effectiveness – if we need to adapt our models to better serve the force, and these experiments are effective, we need to consider how OPMEP and PME schools need to evolve to encompass these other possibilities.

Faculty development is key to building and retaining a world-class cadre of professional educators across the PME system. Quality faculty need to have opportunities to develop and excel at teaching, research, and service, as well as outreach and engagement for many of our schools. Currently, individual faculty research is a sticky issue. It is a need already identified that the PME system does not serve sufficiently – and our research centers like NDU's INSS are not large enough to respond to all of the demands the force has for thoughtful strategic research. The system needs to emphasize the importance of individual faculty research for both the professional development of the faculty members themselves, but also for the relevance and continuing excellence of the academic programs executed by all of our PME schools.

One key issue that requires sustained attention system-wide is ownership of intellectual property. Some schools have devised a method for giving their faculty intellectual property rights for the work they do – a key incentive for research. At civilian colleges, faculty own their work, and gain respect (and grants, too) on the basis of their individual records of scholarly achievement. Federal employees obviously live under a different system, but it does have some flexibility for specialists like our entire Title X faculty and staff. We must explore system-wide mechanisms for allowing all PME Title X faculty to own the fruits of their intellectual work, and to enable

them to do this work AT WORK, instead of finding legalistic work-arounds that are unsatisfying and time-consuming.

The Joint Forces Staff College and the Changing Character of War

1. **Purpose.** The faculty, staff, and leadership of the Joint Forces Staff College (JFSC) have initiated two College-wide efforts aimed at evolving the institution to meet the challenges of the 21st century national security environment and corresponding changes in the character of modern warfare. The first of these initiatives is a comprehensive review and updating of the curricula in each of the three schools that comprise the College. The second is an institution-wide *JFSC Campaign Plan* that encompasses five Lines of Effort (LOEs), including:

- 1) education and leader development;
- 2) Joint research and analysis;
- 3) engagement and communication;
- 4) institutional security and support; and
- 5) institutional adaptation and accreditation.

The overarching goals of these two processes are to ensure that JFSC remains relevant and valuable to the Joint Force, while producing world-class Joint warfighters and campaign planners who understand the modern global strategic context and their place within it. Accordingly, the purpose of this memorandum is to outline the major institutional goals and objectives that lie at the core of these two complementary JFSC reform initiatives.

2. **Establish JFSC as a thought leader in “The New American Way of War.”** JFSC will evolve to become a leading center for the effort to understand, develop, and apply the concepts of Globally Integrated Operations (GIO), Multi-Domain Operations (MDO), and the operational-level implications of Great Power Competition (GPC).
3. **Review and revise the curricula in all three JFSC schools to place the new national strategic guidance and emerging Joint doctrine at the center of all programs.** JFSC will fully embrace the new NSS, NDS, and forthcoming NMS, as well as the new CCJO, UCP, and evolving Joint functions, among other emerging developments.
4. **Emphasize lethality and interoperability in joint and combined warfighting, across all domains.** JFSC will also challenge our students and faculty to begin to think about the application and ethics of operations within the emerging “sixth domain,” or a cognitive domain that includes machine learning, autonomous equipment, and artificial intelligence.
5. **Revitalize relationships with the Combatant Commands (CCMDs) and our other stakeholders and partners, in order to maintain the currency and relevance of our curricula.** In addition to our primary stakeholders—the CCMDs—these partners and stakeholders range from Joint and service doctrine developers, to international partners and allies, to academic institutions and think tanks, to the J-7 (South) and their affiliated Joint Lessons Learned Division (JLLD), to other U.S. agencies and departments.

6. Ensure that program and course assessment mechanisms are directly aligned with learning outcomes to yield empirical measures of student achievement and program effectiveness. JFSC will get beyond “student satisfaction surveys” as the primary measure of program performance. Instead, we will evaluate student and graduate competencies objectively and directly, then use these data to inform institutional and program assessments. These assessments will be centered on the learning outcomes common to all JFSC graduates, regardless of school or course. Graduates of all JFSC programs:
 - a) can understand and apply the Joint Planning Process (JPP);
 - b) have increased Joint acculturation and leader development;
 - c) can serve as members of Combatant Command (CCMD) or Joint Task Force (JTF) staffs;
 - d) have improved critical thinking skills and communicate more effectively;
 - e) can place Joint operations into a broader strategic context; and
 - f) understand relevant Joint doctrine.

7. Establish JFSC as a center for research and analysis in support of the Joint Force and Joint doctrine developers, while broadening the scope of the College’s contributions to the Joint Force. As JFSC evolves to meet the needs of the 21st century Joint Force and U.S. national security, the College’s contributions will expand to include:
 - a) Students and graduates who serve in the Joint Force;
 - b) Rotating faculty and staff who rejoin the Joint Force after teaching at JFSC;
 - c) Faculty research in Joint operations/planning and the operational/strategic nexus;
 - d) Faculty analysis aimed at solving challenges/problems posed by the CCMDs and JS;
 - e) Faculty service, both internal to JFSC/NDU and in the broader academic community;
 - f) Contributions to the development of Joint doctrine;
 - g) Research in support of J-7’s Joint Lessons Learned Division (JLLD);
 - h) Collaboration with TRANSCOM’s Joint Enabling Capabilities Command (JECC).

8. JFSC will “up our game” in terms of the currency, relevance, and caliber of the speakers we invite to address our students in all three schools. The goal is to enable our students and faculty to learn from the best and brightest warfighters, planners, and thinkers, while exposing them to the cutting edge experts who will challenge and stretch their thinking.

9. Define, codify, and implement the “Teaching, Research, Engagement, and Service” (T/R/E/S) model in a Faculty Handbook. The current expectations of the JFSC faculty focus almost exclusively on teaching hours. This singular focus can result in the faculty becoming stagnant or stale, unless they take it upon themselves to develop themselves in their disciplines and to remain current in Joint operations and Joint doctrine. The Faculty Handbook will codify the T/R/E/S requirements, tied directly to the College mission. We will also shape the faculty workload policy to enable the faculty to achieve these expectations.

10. Align hiring, assessment, promotion, compensation, and renewal practices with the T/R/E/S model's expectations to enhance the JFSC faculty's Joint currency and to focus their contributions to the College mission. We have asked the faculty to develop reasonable expectations for each rank and type of professor, tailored to the circumstances of the three schools that comprise JFSC. In short, we will align the institutional requirements of the College mission with faculty incentives, and then hold the faculty accountable for the results.
11. Design, implement, and require peer teaching evaluations to develop and enhance faculty teaching competencies and to inform promotion and renewal decisions. Peer teaching evaluations are standard practice in most institutions of higher learning, and they will help our faculty to refine their teaching skills, while also informing performance assessments.
12. Revamp the JFSC Faculty Development Program. In addition to restructuring the orientation activities for new staff and faculty, we are overhauling the Faculty Development Program to focus on three critical core competencies. These competencies are (1) leading seminar instruction; (2) maintaining currency with strategic guidance and Joint doctrine/operations; and (3) enhancing the faculty's writing skills and their ability to teach writing.
13. Review and revise JFSC faculty hiring and compensation procedures to expand the applicant pool, increase faculty diversity, and ensure equity in compensation. The goal is to hire "the best athletes available" after casting the net as broadly as possible, while promoting diversity of thought and experience and treating all employees equally and fairly.
14. Replace the notional "EASTCOM" (West Africa) CCMD with EUCOM or INDOPACOM as the vehicle for JFSC's operational planning and war gaming exercises. The goal here is to leverage the students' effort as fully as possible while enhancing their real world understanding of GIO and MDO in the pursuit of GPC. This approach will also enable students to conduct analysis of "wicked hard problems" within the CCMDs where they serve.
15. Revamp the JCWS writing program by replacing lengthy group writing projects with individual writing requirements that will enable the students to serve effectively on CCMD and senior leader staffs. A common refrain from the CCMDs and senior leadership is that staff officers cannot think critically, conduct careful and effective analysis, and articulate their analysis in the form of concise and effective information papers and policy recommendations. We are revamping our writing program to focus on these critical reading, thinking, writing, and speaking tasks. JAWS and JC2IOS will add similar requirements.
16. Realign and reallocate the College's human resources to focus the staff and faculty on JFSC's core competencies and emerging requirements. To align our human resources with the College's core competencies in a resource-constrained environment, we are pursuing four mitigating strategies, including (1) leveraging faculty service; (2) contracting for specialized expertise in a targeted areas; (3) realigning PDs for retiring or transitioning personnel; and (4) competing our remaining gaps in capability or capacity within NDU's business processes.
17. Consolidate the three modes of delivering the Joint and Combined Warfighting School's JPME II curriculum to achieve more consistent and effective outcomes and to realize

efficiencies in faculty utilization. We made this move in August of 2018 and are now implementing the changes required to align the modes' curricula and faculty. We are taking full advantage of this opportunity to increase program effectiveness and efficiency.

18. Shape and support the ongoing revisions to the Officer Professional Military Education Policy (OPMEP). JFSC is contributing to the effort to create a "warfighting OPMEP," one that emphasizes achieving measurable results, rather than merely listing topics to be taught.
19. Rebrand and rename the College to reflect the actual level of JPME delivered, while revising the College motto to reflect modern curricular goals and purpose. As a full-fledged JPME II certifying institution that educates and trains senior leaders up to and including flag officers, while providing the U.S. military with its premiere campaign planners and senior strategists, the College is currently misnamed as a "staff college." Furthermore, the College motto reflects the initial objectives of Goldwater-Nichols in the 1980s, rather than the contemporary needs of the Joint Force. Renaming and rebranding the institution will enable us to attract top-flight talent, reset higher expectations for faculty and students, and properly reflect the College's modern contributions to the Joint Force and U.S. national security.
20. Improve the quality of the JFSC student living and learning environments. The housing, educational support technology, and MWR facilities available to the JFSC are substandard, a fact acknowledged by all stakeholders. When students are distracted by pests, non-functioning air conditioners in the summertime, or intermittent network connectivity, they are not fully focused on their learning activities. We are working these issues aggressively with our NDU, NAVFAC, and JS teammates.