

**Army Leadership in the 21st Century:
A Proposed Research Framework**

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19991004 209

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September 1999

**U.S. Army Research Institute
for the Behavioral and Social Sciences**

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**U.S. Army Research Institute
for the Behavioral and Social Sciences**

A Directorate of the U.S. Total Army Personnel Command

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Research accomplished under contract
for the Department of the Army

George Mason University

Technical review by

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REPORT DOCUMENTATION PAGE

1. REPORT DATE (dd-mm-yy) September 1999		2. REPORT TYPE Final		3. DATES COVERED August 1998-June 1999	
4. TITLE AND SUBTITLE Army leadership in the 21st century: A proposed research framework				5a. CONTRACT OR GRANT NUMBER DASW01-98-C-0033	
				5b. PROGRAM ELEMENT NUMBER 0603007A	
6. AUTHOR(S) Stephen J. Zaccaro, Richard J. Klimoski (George Mason University); Paul A. Gade (U.S. Army Research Institute)				5c. PROJECT NUMBER A792	
				5d. TASK NUMBER 189	
				5e. WORK UNIT NUMBER C01	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) George Mason University, Department of Psychology MSN 3F5, Fairfax, Virginia 22030-4444 U.S. Army Research Institute 5001 Eisenhower Avenue, Alexandria, VA 22333-5600				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES) U.S. Army Research Institute for the Behavioral and Social Sciences (Attn: TACP-ARI-RP) 5001 Eisenhower Avenue Alexandria, VA 22333-5600				10. MONITOR ACRONYM ARI	
				11. MONITOR REPORT NUMBER Research Note 99-34	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution is unlimited.					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT (Maximum 200 words): This report presents a framework for future research on Army leadership. Seven key themes, reflecting research on leadership models, tools, and problematics are suggested: (1) Defining and assessing leader effectiveness, (2) Identifying and assessing leader potential, (3) Leadership development as an integrated system, (4) The management of change, (5) Leader performance under adversity, (6) Leadership and the development of subordinate personnel, and (7) Leadership of retention. Specific research questions relating to each of these themes are also suggested. Example research programs addressing the four problematics are also provided. These examples were derived from contributions by several military and academic researchers at a conference convened by the authors to consider this research agenda.					
15. SUBJECT TERMS Leadership Research Programs Changing Army					
SECURITY CLASSIFICATION OF			19. LIMITATION OF ABSTRACT	20. NUMBER OF PAGES	21. RESPONSIBLE PERSON (Name and Telephone Number)
16. REPORT U	17. ABSTRACT U	18. THIS PAGE U	Unlimited	50	Paul Gade 703/617-8866

FOREWORD

The Army must develop leaders who can effectively apply the four core dimensions of leadership: values, attributes, skills, and actions. These provide the basis for leader development policy, doctrine, training, and research. To assist the Deputy Chief of Staff for Personnel (DCSPER) as the proponent for leadership and leader development policy, the US Army Research Institute (ARI) and George Mason University (GMU) sponsored a workshop of military and civilian leadership researchers on May 25 to 26, 1999.

This report summarizes the contributions of several military and civilian leadership researchers. This group responded to a general research framework with specific research on leadership models, tools, and problematics. The framework was organized along seven key themes: (1) Defining and assessing leader effectiveness; (2) Identifying and assessing leader potential; (3) Leadership development as an integrated system; (4) The management of change; (5) Leader performance under adversity; (6) Leadership and the development of subordinate personnel; and (7) Leadership of retention.

The report provides specific research questions relating to the seven themes. Example research programs addressing these themes are also provided. These examples were offered as a way of representing the broad spectrum of research that the framework encompasses, from which the Army could select to focus its research program.

This research was briefed to the Leadership Action Group, chaired by BG Melton, Director, Human Resources Directorate, DCSPER.

It is hoped that this leadership research framework will help all organizations to improve current leadership research, develop new ideas about leadership, build consensus, and help improve the development of effective Army leaders.

Army Leadership in the 21st Century: A Proposed Research Framework.

EXECUTIVE SUMMARY

Research Requirement:

To assist the Deputy Chief of Staff for Personnel (DCSPER) as the proponent for leadership and leader development policy by devising a research framework for future research on Army leadership, for the changing Army, through the contributions of several military and civilian leadership researchers at a US Army Research Institute (ARI) and George Mason University (GMU) sponsored workshop on May 25 to 26, 1999.

Procedures:

This report summarizes the contributions of several military and civilian leadership researchers. This group responded to a general research framework with specific research on leadership models, tools, and problematics. The framework was organized along seven key themes: (1) Defining and assessing leader effectiveness; (2) Identifying and assessing leader potential; (3) Leadership development as an integrated system; (4) The management of change; (5) Leader performance under adversity; (6) Leadership and the development of subordinate personnel; and (7) Leadership of retention.

Findings:

The report provides specific research questions relating to the seven themes. Example research programs addressing these themes are also provided. These examples were offered as a way of representing the broad spectrum of research that the framework encompasses, from which the Army could select to focus its research program.

Utilization of Findings:

This research was briefed to the Leadership Action Group, chaired by BG Melton, Director, Human Resources Directorate, DCSPER.

ARMY LEADERSHIP IN THE 21ST CENTURY: A PROPOSED RESEARCH FRAMEWORK

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Army Leadership in the 21st Century: A Proposed Research Framework

Introduction

Today, the United States Army stands at another crossroads. Recent changes in geopolitical, technological, economic, cultural, and societal conditions have created a new operating environment for current and future soldiers. Improvements in weaponry and information technology have changed the nature of the future battlefield. Technological advancements have created exponential increases in the data flowing to military decision makers, while new communication technologies have multiplied the number of input channels contributing to strategic and tactical decisions. The traditional warfighting mission of the Army has been greatly expanded to include an increasing number of other-than-war missions, such as peace-making, peace-keeping, humanitarian interventions, and environmental conservation and support. These operations are likely to involve mixed civilian, military, and multinational participants. The global theater for these operations and missions has changed from the bipolar contingencies of the cold war to the multifaceted dynamics of the current era. Further, the actions of the Army and its soldiers are often viewed almost in "real time" in the media.

These myriad changes greatly increase the complexity confronting today's (and tomorrow's) soldier, with corresponding pressures on Army training, development, selection, and assessment systems. The anticipation of such changes has prompted a number of far-reaching and far-ranging decisions by Army strategic policy makers, following from several recent organizational change initiatives. These initiatives include the Army Warfighting Experiment (AWE), OPMS XXI, Force XXI, the Army After Next (AAN), and Strike Force. A consistent theme in these initiatives, particularly AAN and the Strike Force, has been the key role assigned to leaders and officers as the propagators and managers of organizational change in the Army. The success of the Army in meeting its future challenges will depend heavily upon the quality of its officers and how well they are trained to respond to their changing operational environment.

Understanding the changing roles of leaders in the future Army will require an integrated and focused program of research on leadership. Such a program needs to reflect three dimensions, or foci, of leadership research:

- Leadership models and theories
- Leadership tools
- Leadership problematics

The first two dimensions represent the infrastructure of leadership research -- tools and conceptual models or theories. Tools include measures of leader effectiveness, assessments of leader potential, as well as the attributes that contribute to effective leadership, training and development programs, and leadership process aids. Theories and models are necessary to describe how and when leadership is related to unit and organizational effectiveness, how and when leader attributes contribute to leader effectiveness, and how these leader attributes are best developed through programmatic interventions. Leader assessment tools contribute to the validation of conceptual models; they also provide the means of validating the effectiveness of developmental interventions.

Research on leadership theories and tools is necessary, but not sufficient, to understand Army leadership in the next century. This research also needs to be placed in the service of understanding specific key leadership problematics in the current Army -- issues that are expected to drive critical processes in the future. Recent reports on the changing Army, reviewed by Zaccaro, Klimoski, and Boyce (in press), suggest four key problematics that required new research efforts. These are (a) leadership and the management of change, (b) leading under adversity, (c) the retention of leaders and the leadership of retention, and (d) leader-led development of effective soldiers.

An effective research agenda for future Army research needs to include each of these dimensions -- tools, theories and models, and a focus on key leadership problematics. Prior leadership research, both in the military and in many civilian settings, has reflected one or at best two of these dimensions. However, research that is truly useful for Army policymakers and stakeholders advances our understanding of effective leadership, provides measures and tools that can be used to validate leadership models as well as assess the effectiveness of leader selection and development programs, and provides answers that resolve key leadership problems in the Army.

It is critical to note that leadership problematics need to be examined in light of leader processes, and the attributes that contribute to the effective enactment of these processes. Further, identified attributes contribute to the development of assessment, selection, and development systems. These relationships are documented in Figure 1. Another way of thinking about leadership research is to consider these leadership tools, theories, and problematics as part of a three-dimensional space epitomizing the requisite products of any proposed Army leadership research effort (see Figure 2). That is, future research on Army leadership should be driven by key problematics in the Army, but designed in such a manner as to produce testable conceptual models and useable leadership tools. These tools should allow effective validation of conceptual models. Together with these models, such tools should also foster effective resolutions of the targeted problematics. Figure 2 illustrates this approach with some of the themes in the research framework proposed in this report.

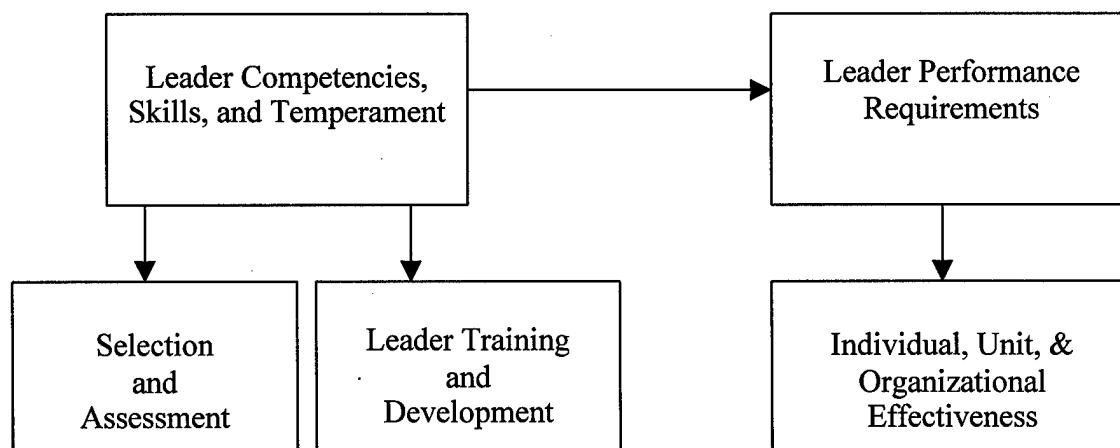


Figure 1. Conceptual Framework for Organizing Leadership Research

Army Leadership Problematics

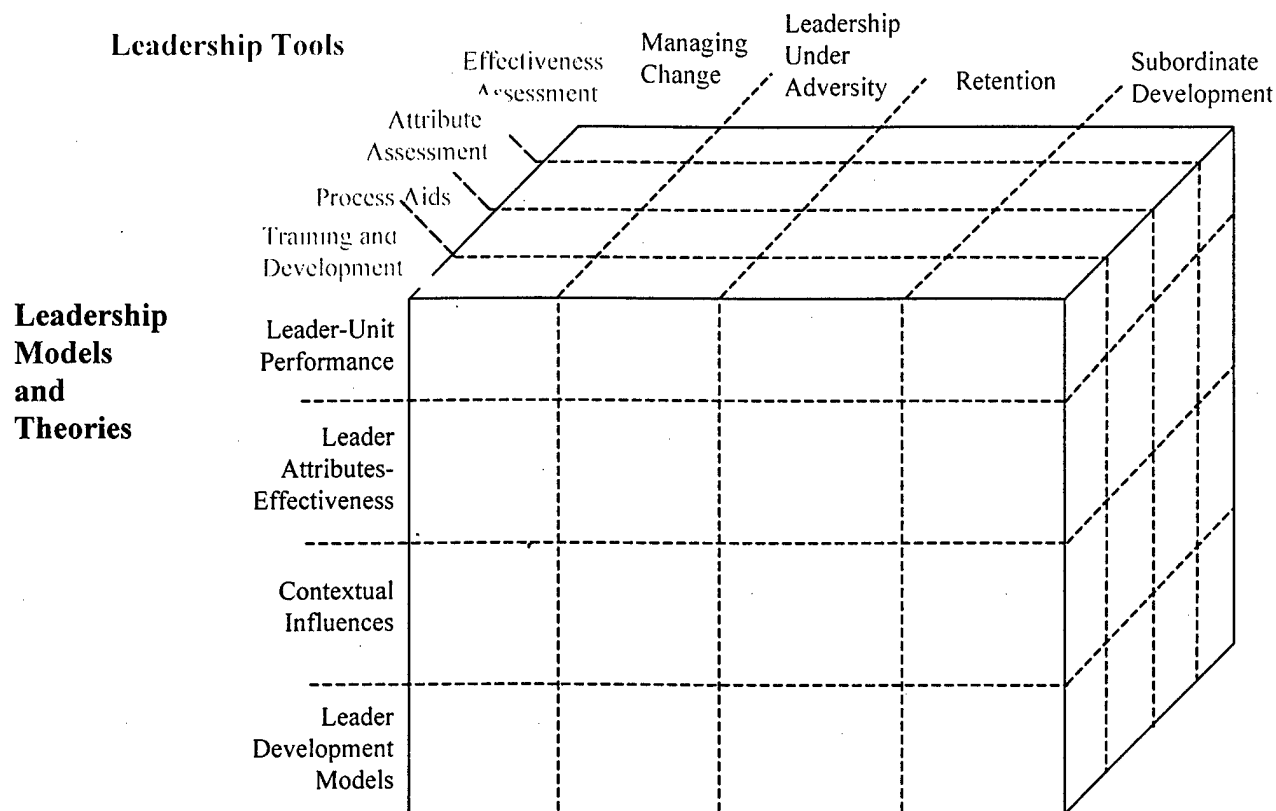


Figure 2. Integrated Perspective For Army Leadership Research

The leadership research agenda described in this report was developed with these three dimensions in mind. Specifically, the proposed research framework addresses questions regarding (a) how leaders manage change; (b) what factors help leaders perform under adversity and complexity; (c) what leadership processes promote subordinate re-enlistment; and (d) what are some best practices for the Army leaders, as well as leader-led development of Army soldiers. The following themes are the key foci of this research framework:

- Defining and assessing leader effectiveness
- Identifying and assessing leader potential
- Leadership development as an integrated system
- The management of change
- Leader performance under adversity
- Leadership and the development of subordinate personnel
- Leadership of retention

Each theme is the focus of one section of this report. Each section describes the basis for a particular theme and provides a number of more specific research questions that, if sufficiently addressed, will add significant value to the Army in terms of understanding leadership and how to develop effective leaders for the changing operational environment of the next 25 years.

The Infrastructure of Leadership Research: Leadership Models and Tools

1. Defining and Assessing Leader Effectiveness

Background. The premise of this proposed research agenda, and indeed of the previous research questions, is that the performance of Army commissioned and noncommissioned officers is the backbone of Army success. Leadership effectiveness can be defined in terms of (a) leadership processes, or behaviors that connote the practice of leadership and are the products of leader attributes, and (b) the consequences or outcomes of leadership behaviors. Leadership processes include such behaviors as boundary spanning, visioning, planning, decision making, communicating, motivating, coaching, and managing personnel and material resources. The outcomes of these behaviors include subordinate and unit morale, climate, readiness, and mission accomplishment. The particular markers of leadership effectiveness differ by hierarchical level in the army. What denotes effective leadership processes and outcomes for company command will differ from indices that mark effective battalion command; likewise, leader effectiveness will be defined differently at the brigade, division, and corps command levels.

Accordingly to a recent report on leader assessment tools, a number of effective instruments exist to measure general leadership effectiveness (Zaccaro, Klimoski, Boyce, Chandler, Banks, Gade, & Psotka, in press). However, these tools are inadequate for several assessment purposes. For example, they do not clearly distinguish the processes that are particular to different command levels in the Army. The assumption of such measures is that leadership at the command level is essentially similar to the practice of leadership at the brigade or division level. Further, there are few measures that specifically assess leadership processes that are peculiar to top or senior organizational levels. Finally, this report noted that there are few acceptable or validated means for reliably measuring leadership behavioral outcome measures. Suggested tools included observer/controller ratings, and indices of readiness and mission accomplishment. However, these assessment strategies exist as templates that require additional research.

The primary means of assessing leadership in the Army remains the Officer Efficiency Ratings (OERs). However, these measures suffer from their inability to distinguish different leadership contexts reflecting different performance demands. Further, because they were constructed primarily for developmental purposes, their utility for other types of human resource administrative decisions.

The link between leadership, particularly executive leadership, and organizational effectiveness is a particular important one, which unfortunately has received little attention in military leadership research. While many studies have been completed on the concept of organizational effectiveness in business and government domains, much of this research may not apply directly to military leadership because of unique properties of military performance requirements. Accordingly, what is necessary is a research program to identify and validate indices of executive and organizational performance in military domains.

The importance of acceptable measures of leadership processes and outcomes lies in their utility for leader training, development, evaluation, selection, and other human resource

management practices. Such measures are necessary to evaluate the full effectiveness of Army leader training and development efforts. Today, training evaluations typically rely primarily on the satisfaction reported by participants, and perhaps some learning indices to assess the effectiveness of leader training. However, the best measures of such training should be how learning translates to more effective leadership processes and unit outcomes. Likewise, such measures would contribute to more effective, comprehensive performance evaluation and selection systems.

Research initiatives. While leader effectiveness can be defined in terms of leadership processes and outcomes, research is necessary to understand the links between these two sets of variables. What is the relationship between effective leadership processes and individual outcomes? Also, how does this relationship change at different command levels? Several theories of organizational leadership argue that different leadership processes are necessary for unit and organizational effectiveness at each command level. The empirical verification of this argument is a critical first step to the development of process and outcome measures that are appropriate for officers in successively higher organizational levels.

A more basic research question is what are the most appropriate measures of effectiveness at different command levels. While the fundamental character of leadership remains essentially the same, officers at different levels in Army command need to confront very different performance requirements. The successful resolution of these performance demands defines the basis for leader effectiveness. Thus, measures of effectiveness need to reflect such differentiations across command levels. Key research questions, then, include how does the meaning of effectiveness change in different commands, and what are the best and most appropriate means of capturing such changes in leader assessment systems.

Outcome measures need to reflect the influence of leadership processes, not only on individual performance, but also on the performance and effectiveness of units under an officer's command. Thus, research needs to be directed at the specification and development of tools that assess unit performance, from the squad and platoon level, to corps and divisions. Such research will be exceedingly difficult because many factors besides leadership processes contribute to unit performance. Further, the assessment of unit performance may require time-lagged measures that capture multiple outcomes unfolding over a long period of time.

Likewise, the determinants of leader effectiveness are likely to vary according to garrison, operational, and wartime conditions. Thus, research is needed to define the components of effectiveness in these conditions and develop indices that capture these components.

While considerable research needs to be focused on the development of appropriate leader effectiveness measures, attention also needs to be directed toward the most efficient ways of collecting such data and using them in human resources management. A major impediment to the development and collection of effectiveness measures has been the intrusiveness of such assessments in training and performance exercises. The extensive use of computers and simulations in such exercises may facilitate the more effective aggregation of performance data. Likewise, the uses of such data in HR administrative decisions such as promotions, assignments,

and retention, have been marginal at best. Given the tenuous nature or suspect validity of existing measures, perhaps this was appropriate. However, because future Army officers will need more complex knowledge structures, competencies, and skills, sound leader effectiveness measures are even more necessary to identify high quality candidates and to validate leader promotion systems.

In sum, the following themes are offered as research initiatives regarding the assessment of leader effectiveness.

- What are the best ways to think about and define leader effectiveness in the today's Army? How will the requirements and definition of officer effectiveness change in the next 20 years?
- What are the most appropriate indices of leader effectiveness at different command levels; in garrison, operational, and wartime conditions?
- What key leader processes contribute to effective leader, subordinate, and unit effectiveness? How does this relationship between processes and outcomes change at different command levels?
- What are the measurable components of unit performance? How do these components change from small teams, such as squadrons and platoons, to larger organizations such as brigades, divisions, and corps?
- What are the most efficient means of collecting officer effectiveness data in different training and performance contexts?
- What is the best use of leader effectiveness tools and data in personnel and human resource management decisions?

2. Identifying and Assessing Leader Potential

Background. Much theorizing and conceptual work has been completed identifying the attributes that contribute to effective military leadership at each command level of the Army. Several models have been offered describing key social, cognitive, personality, motivational, and technical skill attributes that should contribute to officer performance. However, there is little if any empirical verification that officers who have high levels of these attributes meet the performance requirements of their command more successfully than those who exhibit low attributes. Such verification is a critical step before the design of developmental interventions that target growth in these attributes. Yet, all too often, development design proceeds without sufficient validation of what these programs are intended to improve, resulting in costly and wasteful efforts.

Because the performance demands confronting Army officers will change in the future digitized battlefield, the attributes necessary for success are also likely to change. Recent research conducted by the Center for Army Leadership examined how digitization may influence

leadership and leader development. The investigators concluded that while basic competencies and performance demands are likely to remain the same, some attributes will become more important. One obvious change is that new technical skills will be required to understand the architecture, capabilities, and limitations of the new battlefield. Commanders at all levels will be faced with greater informational and environmental complexity. Accordingly, complex thinking and social capacities will be more important for success at lower command levels than in today's army. These changes have significant implications for the design of officer development programs in the future.

While considerable research has been completed to identify key leader attributes, the consideration of effective platforms and systems to assess these attributes have lagged considerably behind. Many of these platforms have been developed for specific training contexts, limiting their applicability to other Army domains. They have rarely been fully validated as effective measures of leader attributes before being applied in training settings.

Research initiatives. Research should be directed at the empirical verification of leader attributes described by many military leadership researchers as contributing to officer effectiveness. Such research will require the careful specification of performance demands confronting today's officers, measures of how well officers respond to these demands, and assessment of unit outcomes that are influenced by successful leadership. Further, the identification of key leader attributes will need to be organized by command level because performance demands change as leaders ascend the organizational hierarchy. These research requirements are noted above as important initiatives regarding the assessment of leader effectiveness, and understanding performance under adversity and the management of change. Measures of leader attributes are validated when they accurately predict the successful accomplishment of performance requirements, and the subsequent improvement of subordinates and units under an officer's command.

Because the nature of the challenges facing Army officers will change over the next 25 years, it is necessary to identify and validate measures of attributes that will help officers successfully meet these demands. While some research has already been completed on this question, a more systematic and far ranging effort is required. This effort will be difficult because the future performance requirements can only be guessed at an unknown level of accuracy. However, recent research by investigators at Army Research Institute have developed procedures for "future-oriented" job analyses and applied them to the anticipated job requirements for noncommissioned officers. Such techniques can be adapted and used to examine potential job challenges facing officers at different command levels.

A better understanding of current platforms for assessing leadership attributes is necessary before work can proceed on improving their applicability to future leaders. Such platforms include tests, personality inventories, surveys, assessment center exercises with observer/ controller ratings, and selection boards. Key questions are: (a) what is the validity of these approaches; that is, how well do they measure the targeted attributes; (b) are these the most effective and efficient means of assessing important leadership qualities; (c) at what points in an officer's career can the administration of these assessment platforms be most beneficial to the officer, to the Army; (d) at what points in an officer's career can such assessments be most cost

effective; (d) how can the assessment of leader potential best be integrated into leader developmental experiences; specifically, what assessment platforms are most effective in the context of leader development; and (e) what are the best means of using data regarding leadership potential in promotion and selection decisions?

In sum, the following are offered as potential research questions:

- What are the key personal attributes that contribute to effective leadership in the modern Army? How do these attributes change at different levels of leadership and command in the Army?
- What attributes will increase (or decrease) in importance as the operating environment for the Army changes over the next 25 years?
- What are the best platforms for measuring key leader attributes? How should current assessment platforms change to meet future demands?
- What are the best and most practical means for validating platforms used to assess leadership potential?
- When/where/how frequently should officers be assessed over the span of their careers?
- What are the best and most practical ways for the Army to use assessment information in human resource management?

3. Leadership Development as an Integrated System

Background. The Army develops its officers through three developmental systems: institutional training, operational assignments, and self-development. The Army's systematic leader development efforts occur principally through institutional training. Leadership schooling begins prior to commission through Reserve Officer Training Corps (ROTC), the U.S. Military Academy (USMA), and Officer Candidate School (OCS). After commission, officers attend specific schools at particular points during their ascendance through Army ranks. For example, at various points in an officer's career, he or she will attend the Officer Basic Course, the Officer Advanced Course, and the Combined Arms and Services Staff School (CAS3). Selected officers may then attend Command and General Staff College (CGSC), the Army War College (AWC) or other service colleges. The curriculum at each of these schools is designed to provide officers with the knowledge, skills, abilities, values, and other attributes commensurate with the performance requirements at their command level or the level they are approaching.

The operational experience pillar is much less organized, although the curriculum at various schools provide instructions to commanders on how to develop their subordinates through work assignments and systematic feedback. Operational assignments are intended to extend and "stamp-in" the information and skills gained from institutional training. They are also used to provide developmental experiences that forecast the kinds of performance

requirements that officers should expect in future commands and leadership positions. The operational pillar represents a range of work experiences, from structured command assignments to daily tasks and work assignments.

Self-development exercises are the least organized of the three Army leader developmental pillars. These exercises are intended to support and extend gains accrued from training and assignments. These exercises are expected to be structured primarily through leader development action plans established in consultation with one's commanding officer. A recent conceptual review of such efforts in the Army concluded the following (Bryant, 1994, p. 9):

Self-development based largely on self education necessarily plays an inordinately important role in perfecting skills, maintaining competence, and promoting professional growth. Unfortunately, however, too much may be asked of self-development within the contemporary context. In this regard, the self-development pillar has become something of a residual category of professional education, a kind of "catch-all" mechanism, as it were. That which cannot be accommodated within the more formal educational mechanisms can be relegated to the informal mechanism. The self-education process, perhaps today is the object of unrealistic expectations. The Army recognizes that the professional has the responsibility and the need to "continue to expand [his or her] knowledge base," and speaks of various means of accomplishing this. Included are such devices as correspondence courses, civilian education, and/or reading programs. In the absence of specificity, elaborate guidance and counsel, or purposive structure, the self-development pillar of the leadership program is probably not formidable enough to adequately address the tasks, and this would seem to warrant a concerted strengthening and augmentation effort.

These developmental pillars operate fairly independently of one another, with few if any systematic attempts to coordinate their application. The Army can benefit tremendously, however, from the synergy that can be created from the integration and cross-fertilization of these three developmental interventions. Operational assignments can be developed to augment and "stretch" the skills and knowledge gained from training. Self-development exercises can be constructed to define and enrich the contributions resulting from operational assignments and key work experiences. Institutional training can be used to establish the basis or starting points for both assignments and self-development exercises.

The senior officers who will contend with the metamorphosed operating environment for the future Army are today's junior officers, beginning their early institutional training. To meet the future operational needs of the Army, the content of leader training and development -- what attributes, knowledge, skills, and competencies that are to be developed -- will need to change significantly over the next 25 years. New weapon technologies will continue to require new training. The digitization of the future battlefield will demand skills related to information management and utilization. In the future, the work requirements for junior officers will become increasingly more complex. This means that some of the developmental interventions targeting today's senior officers may need to be directed at tomorrow's junior officers. In essence, the changing operating environment for the Army should have both immediate and long range

implications for the development of its future officers.

The growing presence of the Internet and other computer-based technologies offers new and exciting platforms for the delivery of developmental systems. However, an understanding of how best to use such technology in officer development has not emerged at a corresponding pace. These platforms may provide the basis for enhancing the self-development pillar of the Army leader development system, with attendant benefits for institutional training and operational assignments.

A necessary part of any training and development effort is an evaluation of its effectiveness. Such evaluations should contain several specific criteria. For example, Kirkpatrick (1976, 1987) proposed four criteria for training evaluation. As defined within the military domain, these are:

- **Reaction criteria:** officer impressions of and attitudes toward the program;
- **Learning criteria:** measures of learning and knowledge gain by the officer;
- **Behavioral criteria:** degree of improvement in targeted behavior change exhibited by the officer while in an actual command position;
- **Results criteria:** gains in effectiveness and performance of units under officer's command according to Army-established goals and objectives.

Reaction and learning criteria provide information regarding the internal content and context of training, while behavior and results criteria provide data regarding the payoff of training for Army leader effectiveness in actual command situations. Reaction data are typically collected in the form of attitude surveys to participants. Learning criteria are often in the form of examinations administered to training participants to assess knowledge gain. As Goldstein (1991) argues, learning measures "must be objective and quantifiable indicants of the learning that has taken place in the training program. They are not measures of performance on the job" (p. 563). The latter represent behavior criteria and reflect the degree to which training gains transfer to leadership behavior displayed in subsequent actual command positions. Again, such data should not be gathered by means of participant surveys. Results criteria should reflect the desired outcomes of effective leadership for a leader's unit and for the Army as a whole. Such criteria are exceedingly difficult to collect, but represent the most accurate measure of a training program's worth to the Army in terms of its overall objectives.

Kraiger, Ford, and Salas (1993) offer another categorization of key cognitive, skill-based, and affective outcomes that should accrue from effective training interventions, as well as several methods for evaluating such gains. These criteria, together with those suggested by Kirkpatrick, should be used to more systematically evaluate the effectiveness of Army leadership training and development.

Unfortunately, the bulk of the evaluation data collected during Army leader training efforts are primarily reaction criteria, such as measures of satisfaction. While the satisfaction of training participants has some influence on their receptivity to a particular program, such reaction criteria do not relate very strongly to learning, behavior, and results criteria (Goldman, 1991). In other words, the trainees' happiness with a program does not mean that real learning has occurred or that on-the-job performance has improved. Also, Goldstein notes (p. 563):

It is important to realize that reaction measures, like any other criteria, should be related to the <training> needs assessment. Thus, it makes no sense to use reaction measures that ask if the trainee is happy (from "Agree" to "Disagree") unless there is some relationship between happiness and course objectives as established by the needs assessment.

The evaluation of current and future Army leader development programs needs to include multiple criteria. Yet, little research attention has been directed toward the most effective and efficient means of aggregating such data.

Research initiatives. The three pillars of Army leadership development operate fairly independently of one another; that is, operational assignments are not systematically integrated with course instruction and self-development experiences are not systematically designed to augment growth accruing from instruction and assignments. The synergy created from such a systematic integration can lead to more efficient and effective leader growth beyond what is currently achieved from each system independently. A key research question then is, how can the three pillars of Army leader development best be integrated such that each augments the effects of the other?

A related question is, what should be the relative balance of formal training and operational assignments/commands to produce maximum and efficient development? This question concerns, not how the content of each developmental system can follow from the other, but rather, where the appropriate fulcrum is in terms of time and resources allocated to course instruction versus work experiences. An answer to this question would require a careful examination of the current system to determine how existing platforms are performing in developing our officers and to whether a different combination of formal training and experience would be more effective and efficient.

The challenge of making operational assignments more developmental should not be underestimated. The focus should not be on altering command structures or assignments. Instead, the emphasis is on the daily and weekly tasks and job duties that are assigned to officers and soldiers in the course of their work routine. These experiences can be structured to be more developmental in nature without undue disruption of the Army's central mission. The challenge of such a structuring suggests some additional research initiatives. One is an investigation of appropriate operational assignments for different command levels; what are the task assignments and work experiences that best foster growth in the key leadership attributes that are necessary at different points in an officer's career? An answer to this question would require a greater understanding, not only of the attributes that are important for effectiveness at different command levels, but also of the specific kinds of developmental work assignments in each

leadership position that are most effective in growing such attributes.

Another question is, what are the best means of balancing the developmental purposes of operational assignments with the urgency of immediate task and mission requirements? Developmental goals cannot interfere with the fundamental missions of the Army as they translate into specific duties and responsibilities in different commands and assignments. Yet the Army accrues considerable benefit and value from a more systematic consideration of how these responsibilities can be structured to also foster leadership growth. Addressing developmental goals while responding to immediate mission considerations will be a significant challenge to the commanding officers of targeted individuals, a challenge for which they themselves will necessarily require formal training and experience.

A third question is how to best sequence formal training and developmental work experiences over the course of an officer's career. The Army is perhaps unique among organizations in that their leaders are retained and developed over the entire course of their careers; they are not "recruited" from other organizations as is the case in private sector organizations. This allows the creation of a career-long development system that can anticipate performance requirements and train leaders accordingly at different career stages, a system that the Army has created and maintained very carefully. However, integrating training and work assignments should lead to a further consideration of the most appropriate order of such experiences to best foster growth in key attributes needed at different career points.

The self-development pillar of the three Army leadership development pillars has received the least attention. However, Internet technology and other computer-based systems offer opportunities for comprehensive and systemic self-development programs. The Army needs a greater understanding of how such programs can be created to maximize their effectiveness for self-directed leader development. Research is also needed to discover how best to integrate the utility of computer-based self-development programs with the components of formal training and work experiences.

Two cornerstones of self-development programs are the motivation participants bring to the effort and the feedback systems that help them monitor their progress. The success of self-development efforts depends greatly on how willing participants are to allocate personal resources and time to this growth experience. A key question, then, is what factors motivate officers to participate fully in self-development programs. The effectiveness of these programs will also depend upon their feedback and monitoring systems. It is likely that participant motivation can be enhanced through such mechanisms. Thus, two other questions are, what are the best procedures, or "best practices," for providing self development feedback; and what is the function of information/feedback systems in motivating and guiding development.

Development programs need to be evaluated for their effectiveness in developing Army leaders for future challenges. Unfortunately, most training and development efforts are either not evaluated or, at best, are examined only by asking participants whether they were satisfied with the growth and learning experience. While such data are important, they must be augmented by valid measures of learning and knowledge gains, behavioral changes, and value-added to the Army in terms of organizational results. Thus, research needs to be focused on how best to

evaluate formal training programs. The Army also needs a better understanding of how to examine gains from operational assignments and self development efforts.

In sum, the following are offered as key research themes regarding leader development as an integrated system:

- How can the three pillars of the Army leadership development system, institutional education, formal training, operational assignments, best be integrated so that each builds upon and augments the strengths of the other pillars?
- How are existing development platforms performing in helping officers meet future challenges? What is the most efficient and effective balance of formal training and operational assignments that maximizes officer development?
- What operational tasks and duty assignments best foster growth in the key leadership attributes that are necessary at different points in an officer's career?
- What are the best means of balancing the developmental purposes of operational assignments with the urgency of immediate task and mission requirements?
- What are the most beneficial sequences of formal training and growth-oriented work experiences for developing future officers?
- What are some "best practices" for effective self-development programs? What are the best uses for computer-based and Internet technologies in self-development programs?
- What factors motivate self-development? What is the function of information and feedback systems in motivating and guiding leader development?
- How should the Army assess and evaluate the effectiveness of their leader development systems? What are the most appropriate criteria and measures for such evaluations?

Critical Research Themes: Army Leadership Problematics

4. The Management of Change

Background. While change has been a ubiquitous feature of the U.S. Army, the dynamic conditions currently confronting Army officers is qualitatively different from conditions in the past. Today, the rate or velocity of change is quicker, spurred by technological advances

in the world at large. The nature of these changes is more complex, involving ill-defined problems, ambiguous parameters, and conflicting trends. The scope of change is broader than in the past, occurring in more domains relevant to the Army. Thus, Army officers need to adapt, not only to technological changes, but also to changing geopolitical, economic, societal, and demographic conditions. The velocity, complexity, and scope of these changes suggest that traditional means by which the U.S. Army recognizes and adapts to change may not be sufficient in today's environment.

In the Army, commissioned and noncommissioned officers have been the primary instruments for organizational change. As a group, their tasks include recognizing dynamic environmental conditions and the need for change, developing long-term (and short-term) systemic, strategic, and tactical responses, and implementing these responses across the entire army. In the past, when change has occurred in the Army, the focus for officer training and development has been on new attributes suggested by changing performance requirements. However, the qualitatively different nature and rate of expected changes in the Army today suggest that officers may lack the qualities that promote the management of change. Thus, they may act as impediments to adaptation, or at best are unable to foster the process of effective change.

Further, the U.S. Army has ingrained systematic means by which it recognizes and responds to changing conditions. Such responses will include top level meetings, briefings, organized symposia and conferences, and other organized gatherings to accumulate data, information, knowledge, and ideas. This process yields a consensus and direction that is considered and advocated by policy makers, and implemented by officers at all command levels. However, given the nature and tempo of change today in the Army, these organizational and traditional ways of adapting may need to be augmented by other kinds of more proactive and timely decision making systems.

These points argue for a special research focus on the management of organizational change in the U.S. Army. This focus should include an examination of the processes and attributes, at both the individual and the institutional level, that promote (a) the recognition of the need for change, (b) the establishment of new goals and priorities in a changing environment, (c) development of change strategies and plans, and (d) the management of implementing change within the Army. The importance of such a research focus has been recognized, not only within the Army, but also as part of the Human Capital Initiative research campaign developed recently by the representatives of many psychological associations and organizations. In their report, they argue (Herring, 1992, p15):

Leadership--both its development and its improvement--may represent the biggest challenge of all. Nowadays, technology, demographics, and information are almost synonymous with change. In so dynamic a context, business leaders find it increasingly difficult to guide their organizations. It is hardly surprising, then, that only one-third of America's chief executive officers are judged successful, whereas one-third are outright failures. If we can change these figures by better educating our leaders, we can reap handsome returns. We need an investment in research on leadership, the interpersonal and social processes that underlie it, and

its development throughout the lifespan.

Research Initiatives. It is necessary to understand how the need for change is recognized within the Army, both at a systems level and by individual leaders, particularly senior officers. What are the most effective systemic or institutional mechanisms for recognizing that current policies and practices are incompatible with changing dynamic conditions? Presently in the Army, such mechanisms may be initiated when a critical mass of leaders becomes aware of changing conditions and calls for series of meetings to examine these conditions. Meetings are held at which middle- and senior-level decision makers discuss the need for change and propose various strategic pathways. Top executives make "final" strategic decisions, which are then implemented through a subsequent series of meetings. Recent examples of this process include the Army Warfighting Experiment, Force XXI, the Army After Next, and the Strike Force.

Because of the unique nature of the U.S. Army as an organization, these processes and mechanisms for recognizing and planning for change differ from those that typify most private sector (and many public sector) organizations. Accordingly, research on Army leadership and the management of change should focus on how effective these organizational platforms are for recognizing and making sense of changing environmental conditions. This research should also examine how the U.S. Army as an institution establishes organizational goals for change, and achieves a viable/workable consensus around these goals. The byproduct of this research initiative should be an identified set of "best practices" for the processes and policies regarding organizational sensemaking in the context of change.

Because of its traditional hierarchical organizational structure, top Army executives have a vital role in the recognition for and the management of change. Middle and junior officers have the major responsibility for implementing decisions that shape the Army's adaptation to changing conditions. While a significant number of studies have examined leader attributes contributing to success in military organizations, much remains to be learned about the specific attributes that help leaders manage organizational and environmental change. Thus, an important research initiative should be the identification, assessment, and development of these attributes. Recent research has pointed to the importance of cognitive attributes, such as metacognitive skills, higher order problem solving capabilities, and tacit knowledge, for leader effectiveness in changing environments. A better understanding is needed, though, regarding how these and related cognitive capacities are related to change recognition and management processes. Also, research needs to be directed at higher order social capacities that are linked to successful leader adaptation.

The identification of leader attributes that foster successful change management should prompt research into their assessment and development. Much is known about how to train or develop "lower-order" skills and attributes, such as task knowledge, decision making, and interpersonal management. Further, many assessment tools exist for the measurement of these attributes. However, an understanding of both the principles and practices regarding the assessment and development of higher-order cognitive capacities has remained fairly elusive. Complex social capacities are even less amenable to traditional assessment strategies than cognitive attributes. Key questions, then, are: What are the most effective ways to assess cognitive and social capacities related to the management of organizational change? What kinds

of selection systems are necessary for the identification of potential leaders having these attributes? How do existing developmental programs within the Army need to change to foster the emergence of these capacities in rising young officers?

The themes described thus far in this research initiative are associated with the management of change. There is a need within the Army, however, to understand leader effectiveness in the current Army context, as well as to model the determinants of effective leader performance in the 21st century. Recent research by the Center for Army Leadership has argued that while the basic leadership role requirements and competencies listed in Army doctrine will remain essentially the same in the digitized environment expected in the 21st century, the emphasis on certain requirements and competencies will shift in terms of their influence on leader effectiveness. This suggests several key research questions: What leader attributes and performance requirements are likely to change in importance for leader effectiveness in the 21st century? How will leader effectiveness be defined in the 21st century and what are the most effective ways to measure leader performance?

In sum, the following questions are offered as key research themes regarding Army leadership and the management of change:

- What are the most effective systemic or institutional means of making sense of significant environmental change and recognizing the need for organizational adaptation?
- What are the most effective institutional means within the Army of establishing organizational goals for change and achieving a viable/workable consensus around change initiatives?
- What are the determinants of leader effectiveness in the current Army environment and how will these determinants change over the next 5-25 years?
- What are the personal attributes and qualities that specifically help Army officers manage organizational and environmental change?
- What are the most effective ways of assessing, training, developing, and selecting for these attributes?

5. Modeling Leader Performance under Adversity

Background. A common thread in recent studies on how the future environment of the Army is likely to change is the increase in velocity, uncertainty, complexity, and ambiguity (VUCA) that will confront Army officers. After interviewing and observing Navy crews, Cannon-Bowers and Salas (1998) identified the following stressors as characteristic of today's military operational environment (p. 19):

- multiple information sources,
- incomplete, conflicting information,

- rapidly changing, evolving scenarios,
- requirement for team coordination,
- adverse physical conditions,
- performance pressure,
- time pressure,
- high work/information load,
- auditory overload/interference, and
- threat.

Thus, a fundamental characteristic of military performance is that units often need to perform in difficult and adverse environments. They have to confront high information complexity in situations where both task and environmental parameters are typically changing at an uneven rate. Further, units are often operating in highly time-intensive environments. While many organizations operate under stress, for military teams this complexity is exacerbated by the potentially high personal and collective costs of failure in combat.

Technological advances that are occurring today are likely to increase further the informational complexity and tempo of the military operational environment. Thus, for tomorrow's officers (as compared to the operating conditions for today's Army leaders), the pace of future events in terms of operational tempo, as well as in noncombat situations, will be quicker with more rapid changes in performance contingencies. The meaning of these events will be less immediately discernable, despite, or perhaps because of, the overwhelming amount of information available to the officer; and the performance environments will be composed of many more integrated stimuli that require coordinated responses from multiple military components.

This means that Army officers will need to be more highly adaptive and responsive to changing circumstances. However, there is little understanding about the factors that contribute to effective leadership and unit performance under stress and adversity. Further, we need to know more about the individual and system attributes that promote adaptation and responsiveness to adversity. Such knowledge is necessary for future Army training and development efforts that will be necessary to give officers the skills and tools they need to respond effectively to the VUCA environment.

Research initiatives. Research on performance under adversity will need to focus on the nature of unfavorable conditions that are likely to face tomorrow's officers. Key research questions that follow from this theme include: What is the meaning of "adversity" for future Army officers? Are there different manifestations of environmental adversity offering alternate contingencies for appropriate leader responses? What are the most plausible adverse circumstances to be faced by leaders under garrison, operational, and wartime conditions? What defines adversity in the Army's future operating environment? What will be different from those factors contributing to adversity in yesterday or today's environment. While greater adversity in the past resulted from changing battle conditions and increases in the lethality of new weapons, future adversity will include information overload with severe time compression necessary for a response. Further, tomorrow's officer will be more involved in other-than-war operations, where

missteps may have severe political implications. Thus, a greater range of environmental stressors will contribute to perceived adversity in the future. Research is necessary to fully identify these factors and to determine their common and differential implications for leader responsiveness.

The nature of adversity defines the performance requirements that are likely to dominate the operating environment of future officers. Another important research question focuses on the factors that determine effective performance under adversity. How does performance under typical conditions relate to performance under adverse conditions? How are the determinants of effective performance under adversity different from those factors that contribute to typical performance? These determinants are likely to be categorized according to individual, team, system, and hardware attributes. Which sets of factors contribute most strongly to effective responses to adversity? The answer to this latter question is important because it should determine the distribution of resources to maximize system preparedness and performance under adversity.

Adversity may or may not result in felt stress by Army officers. Stress can be defined as "a process by which certain environmental demands...evoke an appraisal process in which perceived demand exceeds resources and results in undesirable physiological, psychological, behavioral, or social outcomes" (Salas, Driskell, and Hughes, 1996, p. 6). Individual attributes can play three critical roles in this process. First, personal qualities influence the appraisal process that leads to the perception of exceeded resources. Second, personal qualities determine the degree to which such perceptions result in deleterious outcomes. Finally, personal qualities affect the responses leaders will choose to avoid, or ameliorate these outcomes. However, what these attributes are still remains a mystery. Research is necessary to identify the leader qualities that foster effective adaptation and responsiveness to adversity. The specification and verification of these qualities should contribute to future leader assessment, selection, training and development efforts.

Typical responses to adversity are reactive in nature rather than proactive. Yet, effective performance under adversity may come from a foundation of preparatory experiences that anticipate the nature of adverse conditions and foster effective coping with and responsiveness to these conditions. Recent military sponsored research on stress exposure training has emphasized the development of knowledge, competencies, and motivational attributes that promote unit performance under adversity (Johnston & Cannon-Bowers, 1996; Serfaty, Entin, & Johnston, 1998). This research should be expanded to include an investigation of effective leadership practices that lead to proactive responses to adversity.

The following are suggested as key research questions regarding leader performance under adversity:

- What are the kinds of adverse conditions that will confront tomorrow's soldiers and how do they differ qualitatively from current adversity? What are the most plausible adverse circumstances that are likely to characterize garrison, operational, and wartime conditions?

- How is performance under routine conditions (typical performance) different from performance under adversity (maximum performance)?
- What factors determine effective performance under adversity? What are the relative contributions of individual, unit, system, and hardware attributes to such performance?
- What are the personal attributes and qualities that specifically help Army officers respond effectively to adversity?
- What are the most effective institutional, training and developmental interventions that can promote preparedness to adversity?

6. Leadership and the Development of Subordinate Personnel

Background. Recent advances in leadership theory have emphasized the role of leaders in developing the potential of their subordinates and coaching them in their performance. For example, Fleishman, Mumford, Zaccaro, Levin, Korotkin, and Hein (1991, p. 261) defined as key leader performance functions, "teaching individuals things they need to know in order to accomplish assigned tasks or increase their potential value to the organization." Bass's work on transformational leadership theory, which has had wide applicability in the Army (Bass, 1985; 1996), also highlights the role of leader as teacher and coach, who empowers subordinates to perform beyond expectations. He notes that (1996, p. 6),

Transformational leaders pay special attention to each individual's needs for achievement and growth by acting as a coach or mentor. Followers and colleagues are developed to successfully higher levels of potential.

The Army has increasingly recognized the importance of this leadership responsibility. For example, the Army Chief of Staff, General Dennis Reimer noted recently that (1999, p. 291),

Mentoring is key to the current and future health of the Army. Do not confuse mentoring with picking someone you favor and making them a member of your fan club or rewarding apple-polishers with coveted assignments. Mentoring, I am convinced, must be the heart of any serious leader development program. It means one-on-one, face-to-face counseling and preparing junior leaders for increased responsibility by furthering both their knowledge in their profession *and* their trust in their leaders. I tell the members of every Pre-Command Course that identifying and developing the future leaders of America's Army are their most important functions, and that our leader development plan will fail if they neglect this task.

Despite this recent emphasis on leaders as developers, there is a limited understanding of the attributes and processes that contribute to this role. There has also been little research on the most appropriate ways of training leaders to foster the development of their subordinates. Accordingly, research needs to be directed at helping Army officers understand their roles as

Accordingly, research needs to be directed at helping Army officers understand their roles as mentors and teachers, as well as supervisors.

Research initiatives. Effective mentoring and coaching requires personal attributes that are different from those required to successfully meet the other performance demands of the Army leadership role. The Army needs research that identifies these attributes and provides insight and techniques on how to develop them.

Also, basic research is necessary to clarify the roles the leaders can play in subordinate development, relative to the other platforms in the Army. What are the specific contributions that result from leader-led development? These may include effects on subordinate motivation to engage in self-developmental efforts, career guidance, specific training of skills, and careful assignment of tasks promoted the practice and enhancement of recently learned skills.

Leader training and development in today's Army is limited in terms of teaching officers how to be effective mentors and coaches. In addition to growing the attributes necessary for successful mentorship, such development should provide an understanding to officers of how to balance their roles as mentors with the time urgent performance requirements demanded by their immediate missions. Research is required that examines and designs the most appropriate means of conveying such knowledge.

Leader-led development represents a developmental platform that is distinct from existing platforms in the current Army leader development system. Presumably, its largest impact is likely to be in the context of operational assignments and work experiences; commanding officers make the assignments that will (or will not) have developmental implications for their subordinates. Successful leader-coaches most likely play a critical role in helping their subordinates respond successfully to what are initially new job challenges. However, officers may also play a key role in self development platforms by providing sources of encouragement, feedback, and monitoring for such efforts. These notions suggest another key research question: How can leader-led development best be integrated into the three pillars of institutional education, operational assignments, and self-development?

In sum, the following research themes are offered:

- What are the personal attributes that promote effective mentoring and leader-led development? How can these attributes best be developed within current Army leader developmental system?
- What roles do leaders play in subordinate development, relatively to other existing platforms in the Army leader development system? What are the primary consequences of leader-led development for subordinate growth?
- How can leader-led development best be integrated into the current Army leader development system, with its three pillars of institutional education, operational assignments, and self-development?

7. The Leadership of Retention

Background. The retention of officers and the reenlistment of soldiers continue to be a paramount issue for the Army. Retention and reenlistment decisions are grounded in the commitment soldiers have toward the Army. A recent analysis of captain retention by the Office of Economic and Manpower Analysis (OEMA) at the United States Military Academy examined economic indicators linked to the psychological constructs of continuance, affective, and normative commitment. Continuance commitment was defined by the analysts as an attachment to the Army because of perceptions that the costs of leaving are prohibitively high. Results of an economic comparisons with societal peers regarding captain base pay, amount of average housing square feet, retirement value, and medical care has become increasingly disparate with those of relevant comparison groups. Also, soldier deployments have increased dramatically (300%) over the last 10 years, significantly disrupting the private lives of Generation X captains, who as a group place greater values on achieving balance between family/private lives and careers. Taken together, these factors diminish continuance commitment.

Affective commitment is defined as an emotional attachment (i.e., loyalty) to the Army as an organization. According to analyses by OEMA, captains have witnessed significant downsizing in recent years, raising perceptions about organizational loyalty to soldiers. Likewise, while in the Army, recent captains have heard extended debates and introspection about value issues (e.g., homosexual policy, women in combat, sexual harassment, extremist activity), that challenge the bases for affective commitment. Finally, there have been factors that threaten the basis for normative commitment, defined as a feeling of obligation to the Army. Specifically, spousal influences have increasingly diverged. The Army is expected to experience significant changes in the types of soldiers it contains, due to major demographic shifts in the expected pool of potential volunteers.

Several recent reports commissioned by the Army have observed that greater ethnic, racial, and gender diversity characterize the pool of volunteers, from which current and future soldiers will be drawn. College graduates, who will contribute to the officer corps, will also be more diverse. Likewise, traditional values that have defined the core of Army ethos and culture have been challenged and eroded in today's society, with significant implications for ethical conduct. These forces deteriorate the climate for strong commitment and loyalty to the U.S. Army, resulting in pressures against retention and reenlistment.

Several military researchers have argued that these forces and pressures can be countered by strong and effective leadership action. Effective leaders can create a climate of commitment by developing shared values in their subordinates, fostering mutual respect, and modeling behavior that transcends the issues and inevitable conflicts rising from increasing diversity. Models of affective commitment stress the role of work environment in creating loyalty to and identification with an organization. Officers have a dominant role in shaping the contexts and contents of soldier work that can foster affective commitment.

However, these leader influences remain speculative at this time. The Army needs a greater understanding of how leaders and leadership contribute to a climate that promotes enlistment, reenlistment, and retention of officers. Leader training and development must follow

enlistment, reenlistment, and retention of officers. Leader training and development must follow from this understanding.

Research initiatives. While researchers have speculated and argued for leadership processes as effective determinants of organizational retention, there is little systematic research that documents and models these processes. Accordingly, a key question for Army leadership research is, what is the role of leadership in retention and how important are leader factors relative to others in affecting retention? Research on these questions will need to consider the influence of institutional policies and structures on retention (the OEMA study is a good example of such research), and how effective leadership can mediate the influence of institutional determinants.

It is likely that leaders influence soldier retention by fostering organizational commitment and a supportive unit environment. Yet the processes by which such effects occur are still relatively unknown, or unsupported by systematic research. Thus, another key research question is, how can leaders create a climate of commitment and high morale among their units. Also, what is the relationship between leader commitment and subordinate commitment? Bass's (1985, 1996) research on transformational leadership in both military and nonmilitary organizations suggests a strong cascading influence where leader commitment and empowerment translates to similar qualities in their subordinates. Systematic research on this question can lead to a greater understanding of institutional dynamics that can create an organizational climate fostering high commitment, morale, and retention.

It is likely that the attributes helping leaders to build subordinate commitment and unit morale are different from those that facilitate other components of leader performance. Research is necessary to identify these attributes and develop effective platforms for their assessment. Also, the Army needs a greater understanding of the training and development interventions that can best foster growth in such attributes. Recent research on the development of transformational leaders in both military and nonmilitary organizations provides a promising avenue to investigate these questions (Avolio, 1999; Bass, 1996).

In sum, the following research questions are offered, regarding the leadership of retention:

- What are the roles and functions of Army leaders in promoting soldier retention? What factors foster higher retention of junior and middle level officers?
- What are some best practices for how leaders can create a climate of high subordinate commitment and morale? What is the relationship between leader commitment and subordinate commitment?
- What are the attributes and skills that facilitate leader effects on soldier commitment, retention, and morale? What are the most effective assessment platforms for measuring these attributes?

- How can leader attributes that facilitate subordinate retention be best developed within the pillars of the current Army leader development system? What development platforms are necessary or helpful for the effective growth of these attributes?

Summary

This report presents a framework for future research on Army leadership. We offer seven key themes, reflecting research on leadership models, tools, and problematics. We also provide sets of more specific research questions, related to each of these themes, which should be the basis for more specific requests for proposals. Appendix A contains four examples of research programs: leadership and the management of change, leadership under adversity, leadership and the development of subordinate personnel, and leadership of retention . These examples offer potential responses to the problematics described in this his research agenda framework. These examples were derived from contributions by several academic and military researchers at a conference convened by the authors to consider this research agenda. Appendix B contains the proceedings from this conference.

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APPENDIX A

PROTOTYPIC ARMY LEADERSHIP RESEARCH STUDIES

Prototypic Research Plan: Leadership and the Management of Change

A. Statement of Army Need:

Many sectors of the future operating environment for Army leaders are changing dramatically. Research is needed to identify and improve leadership methods for managing change implementation, and to facilitate effective unit responses to change. Research is also needed to identify and develop leader attributes that contribute to effective change management.

B. Research Objectives

1. Identify and validate key attributes and characteristics of extraordinarily effective change agents.
2. Document effective change strategies for military leaders. Link key attributes to effective use of such strategies.
3. Generate pedagogies that demonstrably (a) foster growth in attributes leading to effective change management, and (b) increase change strategy development and implementation skills.

C. Research Tasks

1. Review change management literature to identify processes associated with effective change management.
2. Model the processes and attributes that contribute to effective change management in the U.S. Army.
3. Develop and validate a test battery designed to measure attributes linked to effective change management. Develop measures that assess effective change management in simulated exercises (e.g., OC rating cards), as well as in targeted field sites (e.g., 360 degree instruments; tangible performance outcomes).
4. Obtain senior leadership nominations of effective change agents in the Army and administer test battery to this group as well as to appropriate comparison groups.
5. Interview effective change agents to obtain cases of effective change management strategies and contextual variables that moderate the use of these strategies. Also identify from the structured interviews key work experiences and assignments that fostered learning of effective change management.

6. Validate targeted change management strategies and attributes in a strategic decision making simulation designed to evaluate management of a dynamic strategic environment.
7. Review literature to identify best practices on developing attributes related to effective change management.
8. Design prototypic developmental programs and pedagogies to grow effective change management skills.
9. Validate developmental interventions through the strategic decision exercise and through other measures of effective change management.

D. Anticipated Products:

This research program would yield the following products:

- a conceptual model that increases understanding of effective change management processes and strategies in the Army, the attributes that contribute to these processes and strategies, and contextual variables that moderate their effectiveness;
- a validated test battery that assesses key attributes contributing to effective change management;
- validated measures of effective change management in simulation exercises and in targeted field sites;
- a toolkit of existing best practices designed to develop attributes and skills related to effective change management; and
- validated developmental pedagogies and programs to be added to the toolkit of best practices.

Prototypic Research Plan: Leadership Under Adversity

A. Statement of Army Need:

Future operating environments for Army leaders will contain a number of factors and stressors that contribute to more adverse situations for command. Research is needed to identify the components of stressors in future operating environments, identify the attributes that contribute to effective leadership in such circumstances, and design developmental interventions designed to grow attributes and skills related to effective leadership under adversity.

B. Research Objectives

1. Identify and model the components of adversity that are likely to define the future operating environments of Army officers. Identify and quantify the factors that moderate the relationship between adversity and unit performance.
2. Identify leader attributes that contribute to effective leadership under adversity.
3. Generate and validate developmental programs and pedagogies that demonstrably foster growth in attributes leading to effective leadership under adversity .

C. Research Tasks

1. Review literature to identify processes and leader attributes associated with effective leadership under adversity.
2. Model the processes and attributes that contribute to effective leadership under adversity.
3. Develop and validate a test battery designed to measure attributes linked to effective leadership under adversity. Develop measures that assess effective leadership under adversity in simulated exercises (e.g., OC rating cards), as well as in targeted field sites (e.g., 360 degree instruments; tangible performance outcomes).
4. Validate leadership strategies and attributes in an experiment using a strategic decision making simulation that presents leaders with different adverse circumstances.
5. Validate leadership strategies and attributes in a field settings or exercises in which officers and the units under their command are required to respond to different adverse circumstances.
6. Review literature to identify best practices on developing attributes related to leading effectively under adversity.

7. Design prototypic developmental programs and pedagogies to grow attributes and skills related to effective leader adaptation to adversity.
8. Validate developmental interventions through the strategic decision exercise and through other measures of leader effectiveness.

D. Anticipated Products:

This research program would yield the following products:

- a conceptual model that increases understanding of effective leadership under adversity in the Army, the attributes that contribute to such leadership, and contextual variables that determine the most effective ways of responding to adversity;
- a validated test battery that assesses key attributes contributing to effective leadership under adversity;
- validated measures of leader effectiveness in simulation exercises and in targeted field sites;
- a toolkit of existing best practices designed to develop attributes and skills related to leader adaptation to adversity; and
- validated developmental pedagogies and programs to be added to the toolkit of best practices.

**Prototypic Research Plan:
Leadership and the Development of Subordinate Personnel**

A. Statement of Army Need

Army forces are expected to become demographically more diverse in the future. New recruits are likely to have fewer traditional values and ethical beliefs than prior recruits. Also, the Army is expected to become more team-based and characterized by increased small unit activities. These changes place a premium on subordinate development and team building skills in Army officers. Research is necessary to identify leadership processes that contribute to effective subordinate and unit development. Research is also needed to identify, assess, and develop the leader attributes and skills that promote such processes.

B. Research Objectives

1. Identify and model leadership processes and leader-subordinate relationship characteristics that contribute to effective subordinate and unit development.
2. Identify leader attributes that contribute to effective mentoring and subordinate development processes. Develop and validate a measurement battery that assesses these attributes.
3. Identify critical stages or states of subordinate development, particularly among new recruits, that require focused assessment and intensive leader intervention.
4. Design and validate developmental interventions that demonstrably foster the skills and attributes linked to (a) successful leader-based development of subordinates, and (b) effective team building.

C. Research Tasks

1. Review the literatures on transformational leadership, leader-subordinate relations, mentoring, coaching, and team building to identify key leadership processes, variables, and strategies that contribute to effective subordinate development.
2. Develop a conceptual model of the relationships among leader attributes, leadership functions and subordinate growth. Develop a similar model that describes the determinants of effective team building. Model the influence of different interaction contexts on leader-subordinate relationship dynamics.

3. Develop a test battery, with a 360 degree format that assesses leader team building and subordinate development strategies and skills, as well as the attributes that foster growth in these skills.
4. Validate selected subordinate development and team building strategies in a complex team performance simulation exercise that requires leader-participants to develop an effective unit and respond to multiple complex missions.
5. Validate the test battery in field settings with sufficient samples of leaders and their subordinates.
6. Develop diagnostic tools that can identify critical states or stages of subordinate development that require focused leader intervention, particularly in new recruits. Validate these tools in a sample of new recruits tracked through the conclusion of entry training and first year assignments.
7. Review the literature to identify best practices for training subordinate development and team building skills. Construct a developmental assessment toolkit with sections covering leader variables, subordinate variables, and leader-subordinate relationship variables. Link each section to a cross-index of specific developmental recommendations and resources based on assessments of development needs. Developmental resources should reflect the three pillars of Army leader development – formal instruction, work assignments, and self-study.
8. Design and validate prototypic developmental interventions that target leadership skills and attributes not covered in the toolkit.

D. Anticipated products

This research program should yield the following products:

- a conceptual model that describes the influence of leader, subordinate, and leader-subordinate relationship variables on effective subordinate and unit development;
- a validated test battery to assess leader team building and subordinate development skills, as well as the attributes that foster growth in these skills;
- diagnostic tools that can be used to identify stages or states of subordinate development; and
- An assessment and development toolkit of interventions designed to foster growth in subordinate developmental skills and team building competencies.

Prototypic Research Plan: Leadership of Retention

A. Statement of Army Need:

The retention of quality officers and leaders remains a critical concern for the U.S. Army. Research is needed to identify psychological factors and processes that promote commitment to the Army and increase the retention of quality leaders. Research is also needed to identify elements of superior-subordinate relationships that help create "high retention" climates in Army units and foster better retention of junior officers.

B. Research Objectives

1. Identify psychological variables (e.g., organizational commitment), processes, and their determinants that increase retention decisions by quality junior officers.
2. Determine the contribution of leadership influences to retention decisions by junior officers. Identify leadership processes and functions that influence psychological variables predicting junior officer retention.
3. Identify and validate the leadership attributes that contribute to high retention climates.
4. Generate and validate developmental interventions designed to foster growth in attributes that contribute to effective high retention climates.

C. Research Tasks

1. Review the military retention and civilian turnover literatures to identify (a) psychological variables and processes that contribute to employee retention, and (b) leader attributes, processes, and functions that contribute to higher employee retention.
2. Model the psychological variables, processes, and leadership variables that contribute to a high retention climate.
3. Develop a test battery that assesses leader attributes, leadership processes, and psychological variables that influence soldier retention decisions. Validate the battery by comparing samples of units having high retention rates, with those having low retention rates. Use appropriate covariate assessments to determine the relative influence of leadership influences on retention decisions.
4. Review the literature to determine best practices for developing the leadership processes, attributes and skills that contribute to a high retention climate.

5. Design prototypic developmental programs and pedagogies to develop leadership practices contributing to a high retention environment.
6. Validate developmental interventions through longitudinal research designs with appropriate comparison groups.

D. Anticipated Products

This research program would yield the following products:

- a conceptual framework that models officer retention decisions, identifies the contributions of leadership variables to such decisions, and provides the basis for developing an empirical model that would allow better prediction of retention rates;
- a validated test battery that assesses leadership processes, attributes, and psychological variables that contribute to a high retention climate in Army units;
- a toolkit of best practices for developing leadership attributes and skills contributing to high retention climates; and
- validated developmental programs that can be added to this toolkit

APPENDIX B

Proceedings of the Leadership Research Agenda Workshop

The Army leadership research framework presented in this report was reviewed and revised at a conference sponsored by the U.S. Army Research Institute for the Behavioral and Social Sciences and George Mason University. Participants in this workshop included: active duty Army officers, leadership researchers from multiple Army domains (e.g., Army Research Institute, Center for Army Leadership, U.S. Military Academy), leadership researchers from multiple academic settings, and Army personnel responsible for the education and development of junior leaders. A listing of all participants is given in Appendix C. In this appendix we describe the proceedings of this conference.

The invitation and agenda sent to all participants are shown in Appendix D. Participants were asked to complete the following tasks at this event:

- Attend a briefing on changes in the operating environment of the U.S. Army, and provide insight and analysis.
- Consider and evaluate the draft of the research framework and its responsive to leadership research needs.
- Translate the "broad scope" of the research framework into prototypic research plans. Assist in setting priorities among the research initiatives.
- Identify potential strategic partners and Army stakeholders for each of the research initiatives.

After introductions, the first major session focused on the current and anticipated changes in the Army's operating environment. This discussion, led by Drs. Zaccaro and Klimoski, considered changes in six specific environmental sectors (geopolitical, technological, economic, demographic, socio-political, and socio-cultural). They also examined the implications of these changes for leader performance requirements, leader attributes, leader selection and assessment, and leader development and training. Participants agreed that the briefing captured many of the anticipated changes in the Army's operating environment. They also suggested that a responsive leadership research framework ought to be problem-focused, emphasizing "research with implementation in mind."

The discussion then turned to a presentation of the research framework. The following topics were introduced, along with key research questions:

- The management of change
- Modeling leader performance under adversity
- Defining and assessing leader effectiveness

- Identifying and assessing leader potential
- Leadership development as an integrated system
- Leadership and the development of subordinate personnel
- Leadership of retention

Participants were advised that they would be working in small groups to refine the framework and to translate the research questions into prototypic research plans. Participants rank-ordered their topic preferences and were then assigned to working groups, accordingly. Each working group consisted of four or five members. Both military and academic organizations were represented in each of the small groups.

At the conclusions of the working group sessions, each group presented their ideas and prototypic research plans, following the form shown in Appendix E. These materials contributed to the four plans shown in Appendix A.

On the second day of the conference, participants continued to present the ideas and conclusions from their work groups. After these sessions, they were asked to consider several questions regarding the overall leader research framework:

- How can we ensure that we have captured key critical questions about leadership that the Army will need to address in the future (i.e., how responsive is this framework)?
- How can we ensure that the framework is easily translated into specific research projects?
- How can we ensure that the framework leads to useable products for the Army; to advance our understanding of leadership?
- How can we ensure that the completion of the agenda will lead to outcomes?

Participants were also to work in their small groups to prioritize the research initiatives. In the following plenary session, they offered their priorities and responses to the above questions. Some conclusions from this session were:

- research directed at the assessment of leader effectiveness is the most appropriate starting point for a leadership research program;
- knowledge about leadership processes in different military contexts and the development of validated leadership tools should be the foundation of research on particular Army leadership problematics;

- strategic partnerships can and should be formed with and among the members of the Leadership Research Council; and
- a database of research activities should maintained and regularly updated to provide better integration and coordination of multiple Army research initiatives.

The insights and contributions in these sessions were used to revise the leadership research agenda into its present form. The conference concluded with a discussion of next steps and products. The products of this conference were to be presented to ARI and then made available to all of the participants.

APPENDIX C

PARTICIPANTS

<u>PARTICIPANT</u>	<u>AFFILIATION</u>
Atwater, Leanne	Arizona State University
Avolio, Bruce	SUNY-Binghamton
Ayman, Roya	Illinois Institute of Technology
Bliese, Paul	Walter Reed Army Institute for Research
Bullis, Craig	Center for Army Leadership
Coates, Cathy	Office of Deputy Ass't Sec of Army for Civilian Personnel Policy
Day, David	Center for Creative Leadership
Drillings, Mike	Army Research Institute
Foster, Bob	Deputy for Defense Research and Engineering
Gade, Paul	Army Research Institute
Halpin, Stan	ARI-Leavenworth
Hedlund, Jennifer	Yale University
Hubbard, Dan	US Army Sergeants Major Academy
Hunt, Jerry	Texas Technical University
Jacobs, Owen	National Defense University
Keizer, Herman	Office of Ass't Sec of Army Manpower and Reserve Affairs
Kilcullen, Bob	Army Research Institute
Klimoski, Richard	George Mason University
Kominos, Catherine	Office of Sec of Army Acquisitions, Logistics and Technology
LeBoeuf, Joe	US Military Academy
LeGree, Peter	Army Research Institute
Lord, Robert	University of Akron
Mathieu, John	Pennsylvania State University
McElroy, William	Office of Deputy Chief of Staff for Personnel
Morrison, Walter	Office of Sec of Army Acquisitions, Logistics and Technology
Potka, Joe	Army Research Institute
Shaler, Michael	Marywood University
Simutis, Zita	Army Research Institute
Snook, Scott	US Military Academy
Steinberg, Alma	Army Research Institute
Tootle, Joy	Office of Deputy Ass't Sec of Army for Civilian Personnel Policy
Tremble, Trueman	Army Research Institute

Vecchio, Robert
Westwood, John
Yammarino, Fran
Zaccaro, Steve

Notre Dame
Office of Deputy Chief of Staff for Personnel
SUNY-Binghamton
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Carpenter, Tara
Chandler, Celia
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Incalcaterra, Kara
Marsh, Sean
Orvis, Kara

George Mason University
George Mason University
George Mason University
George Mason University
George Mason University
George Mason University
George Mason University

APPENDIX D

INVITATION AND AGENDA

4 May 1999

Organization

ATTN:

Address Line 1

Address Line 2

Dear XX:

Thank you for your interest in attending *The Future Leadership Research Agenda Conference* hosted by the Army Research Institute (ARI) and George Mason University (GMU). The workshop will be held 25-26 May 1999 at the Holiday Inn in Old Town, Alexandria VA. We consider your participation in this workshop as critical to achieving the workshop objectives.

The Future Leadership Research Agenda Conference has three major objectives:

1. Review for "correctness" the assessment of leadership challenges of the future Army environment;
2. Review for "correctness" the leadership requirements to meet these future leadership challenges; and
3. Assess proposed research approach and agenda.

As we discussed, these objectives are an outgrowth of current research efforts by the ARI and GMU to identify the leadership needs of our future Army. This conference is a key process in the *Leadership for a Changing Army* research project and as such, you and other select military and civilian leadership experts will have an opportunity to impact the future direction of leadership development and assessment in the Army.

The conference is structured to promote a working environment. This will initially involve opening comments by ARI and GMU followed by a large group discussions and small group working sessions. Specifically, Dr. Paul Gade from ARI will open the conference and provide a background briefing to place this conference into context. Steve Zaccaro and Dr. Richard Klimoski from GMU will then present a briefing built around a draft "research agenda" and lead a discussion on the "Future Army" and implications regarding leadership research. Following this facilitated discussion, we will break into small work groups and translate the research agenda into a series of exemplary or illustrative requests for proposals (RFPs). The working groups results will then be used to stimulate discussion and develop plan of attack for stimulating support for and initiating the research agenda. We have enclosed a tentative agenda as well as logistics information.

If you have any questions, please do not hesitate to call me DSN 767-8866 or (703) 617-8866. We look forward to your participation.

Sincerely,

Paul A. Gade
Chief, Organization & Personnel
Resources Research Unit

Enclosures

1. Tentative Agenda
2. Conference Logistical Information

AGENDA

25-26 MAY 1999

TUESDAY	LOCATION *	EVENT
8:30 - 9:00	Brent 1 & 2	Continental Breakfast
9:00 - 9:15	Brent 1 & 2	Welcome and Introductions
9:15 - 9:45	Brent 1 & 2	"Leadership in a Changing Army" Background Briefing
9:45 - 10:15	Brent 1 & 2	"Future Army" Briefing
10:15 - 10:30	Brent 1 & 2	Break
10:30 - 11:00	Brent 1 & 2	Facilitated Discussion on "Future Army" Briefing
11:00 - 11:45	Brent 1 & 2	Presentation of Proposed Research Agenda
11:45 - 12:00	Brent 1 & 2	Charge to Working Groups
12:00 - 1:00	Courtyard	Lunch (King Street Salad Buffet)
1:00 - 4:00	Federalist 1 & 2	Research Agenda Translation (Working Groups)
4:00 - 5:00	Brent 1 & 2	Presentations of Working Group Discussions

WEDNESDAY		
8:30 - 9:00	Federalist 1 & 2	Continental Breakfast
9:00 - 10:15	Federalist 1	Facilitated Discussion of Research Agenda
10:15 - 10:30	Federalist 1 & 2	Break
10:30 - 12:00	Federalist & Courtyard	Priority Setting (Working Groups)
12:00 - 12:45	Federalist 1	Developing Strategic Partnerships
12:45 - 1:00	Federalist 1	Conference Wrap-Up
1:00 - 2:00	Courtyard	Lunch (The "Deli")

*Brent 1 & 2 are on the 5th floor
 Courtyard is on the ground floor
 Federalist 1 & 2 are on the ground floor

APPENDIX E

RESEARCH PROJECT PLAN FORM

Research Initiative: _____
Research Theme: _____

Research Project Proposal

Please use the following template to develop possible leadership research projects under the above research initiative.

A. Statement of Army Need

B. Research Objectives

C. Research Tasks

D. Anticipated Products

E. Interested Army Units/ Implementation Plan