

A paper featured at the  
2010 Topical Symposium:

***Economic Security: Neglected Dimension of National Security?***

Hosted by:  
The Institute for National Strategic Studies  
of  
The National Defense University

24-25 August 2010

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## A WELL EDUCATED WORKFORCE:

### VITAL COMPONENT OF NATIONAL AND ECONOMIC SECURITY

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*The ideas contained in this article were presented at the National Defense University's 2010 Symposium on Economic Security: Neglected Dimension of National Security?*

The world is awash in change. It is the truism of our times. In defining and redefining the national security strategy of the United States, President Barack Obama introduced his national security strategy with the following statement:

*Time and again in our Nation's history Americans have risen to meet – and to shape – moments of transition. This must be one of those moments. We live in times of sweeping change. . . . Our strategy starts by recognizing that our strength and influence abroad begins with steps at home. We must grow our economy and reduce our deficit. We must educate our children to compete in an age where knowledge is capital, and the market place is global.<sup>1</sup>*

Later in May 2010, in a speech before the Council on Foreign Relations, Secretary Arne Duncan spoke of the importance of a well educated citizenry.

*America's success depends on the success of its individual citizens, just as the progress of humanity ultimately depends on the shared progress of nations. I believe that education has immeasurable power to promote growth and stability in the 21st century.*

The history of the United States is a history which recognizes the contribution of education to economic and national security. In 1635, less than 30 years after the first settlers landed on American soil, the Boston Latin School was founded and the first free school was established in Virginia. In 1636 Harvard College was established in Cambridge Massachusetts and in 1693 William and Mary College was established in what is now Williamsburg, Virginia. In 1862 Congress passed the Morrill Act which established "land grant" colleges to "endowment, support, and maintenance of at least one college where the leading object shall be, without excluding other scientific and classical studies and including military tactics, to teach such branches of learning as are related to agriculture and the mechanic arts, in order to promote the

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<sup>1</sup> "National Security Strategy, May 2010,  
[http://www.whitehouse.gov/sites/default/files/rss\\_viewer/national\\_security\\_strategy.pdf](http://www.whitehouse.gov/sites/default/files/rss_viewer/national_security_strategy.pdf)

liberal and practical education of the industrial classes in the several pursuits and professions in life." <sup>2</sup>

By the last third of the 20<sup>th</sup> century, the United States was among the best educated citizenry in the world. In 2010 American is now "ranked 12<sup>th</sup> in the number of 24-35 year olds with college degrees . . . among 36 developed nations."<sup>3</sup> Discussing this issue before Congress earlier this year, Gaston Caperton, president of the College Board stated, "The growing educational deficit is no less a threat to our nation's long-term well being than the current fiscal crisis. . . To improve our college completion rates, we must think "P-16" and improve education from pre-school through higher education."<sup>4</sup>

The College Board advocates achieving 55 percent graduation rate by 2025 if American is to remain competitive with the rest of the world. This goal is in contrast to the 2008 graduation rate of just under 42 percent. To achieve the 55 percent goal, the United States must find a solution which supports college educations for low income and minority populations within the country. Achieving this goal also assumes that progress can and will be made in getting children enrolled in pre-school and elementary school and that they will stay in school through at least an associate's degree. <sup>5</sup>

*According to OECD in 2007 our nation ranked sixth in post-secondary educational attainment in the world among 25-60 year olds. The United States ranked fourth for post secondary attainment for citizens age 55-64. The United States trails the Russian Federation, Israel and Canada in this age group. As American's aging and highly educated workforce moves into retirement, the nation will rely on young Americans to increase our standing in the world. However, . . . among citizens between 25 – 34 in developed countries, the United States ranks 12th<sup>6</sup>.*

In recognition of the inextricable link between national security and economic security, the National Defense University's August 2010 symposium, entitled "Economic Security:

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<sup>2</sup> <http://www.cloudnet.com/~edrbsass/educationhistorytimeline.html>

<sup>3</sup> Levin, Tamar, "Once a Leader, U.S. Lags in Attaining College Degrees", New York Times, July 23, 2010.

<sup>4</sup> Ibid. Levin.

<sup>5</sup> Lee, John Michael, Jr., and Rawls, Anita, "The College Completion Agenda: 2010 Report", College Board Center for Advocacy and Policy Center, 2010, p 9.

<sup>6</sup> Ibid. "The College Completion, p. 9.

Neglected Dimension of National Security?”, examined a variety of aspects of economic security including the need for a well educated workforce to drive the engines of creativity and economic growth.

One aspect of a vibrant economy is a well educated workforce. The human capital discussion panel took its text from President Obama’s national security strategy.

In a global economy of vastly increased mobility and interdependence, our own prosperity and leadership depends increasingly on our ability to provide our citizens with the education that they need to succeed, while attracting the premier human capital for our workforce. We must ensure that the most innovative ideas take root in America, while providing our people with the skills that they need to compete.<sup>7</sup>

The Panel provided a variety of perspectives from the importance of understanding the contribution of strategy to an examination of the challenges currently facing the “P-16” educational system to that of graduate education and finally to the role and relationship between colleges and universities and the national security world of work.

### **America’s High School Pipeline**

Wendy Russell has devoted her professional life to educational reform. Her presentation offered the insights to the educational challenges facing America.

The nation's critical national security human capital needs are three fold<sup>8</sup>:

- Partnership for Public Service estimates candidates who are well versed in information technology is one of the top five federal hiring requirements. **That need translates into 800,000 new IT hires by 2018.**
- A diverse workforce that looks like the nation, and
- Increased supply of critical skills related to fluency in foreign languages and expertise in foreign cultures.

The federal government spends between 70 and 80 billion dollars each year on a wide variety of information technology work from design, implementation and maintenance of enterprise wide systems to assuring the individual employees have computers and support services as needed job tools. Two out of three federal agencies identify information technology as a mission critical

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<sup>7</sup> Ibid. National Security Strategy, May 2010.

<sup>8</sup> Author. (2006) *Strategic Human Capital Plan*. Washington, D.C.: Office of Director of National Intelligence, and Kundra, Viveck. (April 2010) *NetGeneration: Preparing for Change in the Federal Information Workforce*, Washington, D.C. Chief information Officers Council.

occupation. The definition of a “mission critical occupation” is: failure to have these capabilities in the workforce means that the organization will fail to accomplish its mission.

Against this background of need, the reality of today’s high schools across much of America presents a very different picture.

Today's high schools still reflect the 1950's design of a large, comprehensive high schools serving as giant sorting machines for America's students: one track for those students bound for college and professional careers and another for those bound for manufacturing and agricultural jobs in the **industrial economy of the time – an economy that no longer exists.**

There are 19,000 high schools in the United States which provide education to more than 15 million students. In a 2009 self-reporting survey, 95% of teachers stated they have computers in classroom and they use technology for instruction. Yet teachers also reported that their students’ use of computers in the classroom during instructional time ranged from 16% never to 34% often.<sup>9</sup>

Every year, over 1.2 million students- that is 7,000 every school day- do not graduate from high school on time. Nationwide, only about 70 percent of students earn their high school diplomas. Among minority students, only 57.8 percent of Hispanic, 53.4 percent of African American, and 49.3 percent of American Indian and Alaska Native students in the U.S. graduate with a regular diploma, compared to 76.2 percent of white students and 80.2 percent of Asian Americans.

In a multi-national world connected by technology, cheap and swift transportation to every corner of the globe, where more than six billion people speak hundreds of languages and dialects, only 11 states have a two year foreign language requirement to meet HS graduation requirements. An additional five states require two years of foreign language for admission to the state university system, but not for high school graduation. Two additional states require two years for receipt of an advanced diploma, but not a regular diploma.<sup>10</sup> Many have proposals on the books, but have tabled them for lack of funding.

An August 18 Wall Street Journal article reported that test scores for college entrance examination had stagnated. Of the 1.6 million students who took the ACT examination, only 24% scored high enough on the ACT in math, reading, English and science to ensure they would pass entry level college courses. This suggests that the core courses they are taking are not rigorous enough to prepare them for college or the workforce.

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<sup>9</sup> Gray, Lucinda, Thomas, Nina, and Lewis, Laurie. (May 2010). Teacher's Use of Educational Technology in U.S. Public Schools: 2009. Washington, D.C. U.S. Department of Education, IES National Center on Education Statistics. pp. 6 & 12.

<sup>10</sup> Kittok, Janice and Wertz, Ryan. (March 2010). World Languages Graduation Requirements. National Council of State Supervisors for Languages, downloaded 8/16/2010.

The price of providing remedial training is costly. The Alliance for Excellent Education estimates the nation loses \$3.7 billion each year because students are not learning basic needed skills, including \$1.4 billion to provide remedial education for students who have recently completed high school.<sup>11</sup> From taxpayers' standpoint, remediation is paying for the same education twice.

The Alliance for Excellent Education estimates that if the 1.2 million high school dropouts from the Class of 2008 had earned their diplomas instead of dropping out, the U.S. economy would have seen an additional \$319 billion in wages over these students' lifetimes. The Alliance also estimates that the country can expect to lose well over \$300 billion in potential earnings next year as well, due to dropouts from the Class of 2008. If this annual pattern is allowed to continue, more than 12 million students will drop out of school during the next decade at a cost to the nation of more than \$3 trillion.<sup>12</sup>

It is these stark facts that led the Obama administration to say that the nation's long-term prosperity depends on fixing the nation's high schools and preparing students for the global economy, and to include the issues of a sound economy and a well educated workforce as components of its national security strategy.

From unlocking the cures of tomorrow to creating clean energy industries, from growing our economy and creating jobs to securing our nation in the years to come, there is one constant in addressing these challenges: they all depend on having a highly educated workforce.<sup>13</sup>

### **The Architecture of the High School Educational Future**

Peter Smith's latest book, Harnessing America's Wasted Talent, states:

We have reached a tipping point in our educational and economic worlds, the point at which the needs for an informed and appropriately educated citizenry and the capacity to educate them have tipped away from the status quo, toward a future that must be invented quickly.<sup>14</sup>

#### **Step 1: Know Your Customer**

Know your customer which in this case means know your learner. The Net Generation, Gen Y or Millennials, born between 1978 and 1994, have grown up with technology.

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<sup>11</sup> Alliance for Excellent Education, [http://www.all4ed.org/about\\_the\\_crisis](http://www.all4ed.org/about_the_crisis)

<sup>12</sup> Ibid

<sup>13</sup> Ibid., National Security Strategy, 2010.

<sup>14</sup> Peter Smith. (2010). *Harnessing America's Wasted Talent: A New Ecology of Learning*. San Francisco: Jossey Bass, p 114.

- They want continuous feedback and recognition.
- They're used to group/team problem solving.
- They expect high tech/constant stimulation.
- They are used to living in a 24/7 environment.
- They want flexibility in how they do their work.<sup>15</sup>

## Step 2: Student Centric Technology

Schools need to create student centric technology - a computer with software or on-line class time and subject matter chosen by student. This approach will clash with the need to standardize the way schools teach and test **versus the need to customize how students learn**. Schools have done what all organizations do with a new technology - crammed the new technologies in their existing structures, rather than allowing the disruptive technology to take root in a new model and allow it to grow and change how they operate.<sup>16</sup>

There is beginning to be some encouraging activities in this regard as the example below demonstrates.

Over the past 10 years, many of California's high schools have gotten worse, according to The San Francisco Chronicle. In an encouraging trend, however, thousands of high schoolers across California have joined an educational approach called Linked Learning, which changes the way core academics are taught by combining classroom learning with real-world, work-based experience. The idea behind Linked Learning is simple: To make it easier for students to stay engaged, coursework must be relevant to their aspirations. For instance, at Skyline High School in Oakland, Calif., every 10th-grader chooses from seven different career-themed programs where they spend the next three years combining out-of-school internships in their academy field with a rigorous academic core, taught through the lens of their industry theme, which qualifies every student for college. Teachers are trained to incorporate this work-based experience into the classroom, and vice versa. In Skyline's architecture academy, for example, algebra and physics teachers show their students how the formulas they're learning are used in real-world projects like building bridges or designing buildings. The Chronicle describes one student, Cynthia Gutierrez, who entered high school "bored" and garnered mostly Cs and Ds her first year. In the 10th grade, she joined the education academy, centered on careers in education. "Before, I couldn't really connect with my teachers all that well," Gutierrez says. "But in

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<sup>15</sup> Anastasia Goodstein and Mike Dover, *The Net Generation "Dark Side": Myths and Realities of the Cohort in the Workplace and Marketplace*, 19.

<sup>16</sup> Clayton M. Christensen. (2008). *Disrupting Class: How Disruptive Innovation Will Change the Way the World Learns*. New York: McGraw-Hill.

the academy, it was different." Gutierrez's grades improved despite a more demanding course load, and have qualified her for admission to the state university system.

Read more: <http://www.sfgate.com/cgi-bin/article.cgi?f=/c/a/2010/07/24/IN1K1EGR92.DTL#ixzz0uz2DMpfp>

Our second example comes from a North Carolina school system:

Elementary teachers in the Charlotte-Mecklenburg schools will be more effective at integrating engineering and technology in their science curriculum this year thanks to a curriculum developed by Boston's Museum of Science and local partners that include N.C. State University, Discovery Place, UNC at Charlotte, and Duke Energy.

Engineering is Elementary (EIS) uses stories set in various places and cultures to introduce real-life engineering issues, as well as hands-on engineering design challenges that students tackle in groups. According to the Museum of Science, an estimated 1.2 million students in all 50 states will experience learning through EIS this new school year.

### Step 3: Recognize the Learning Edges or Leverage Points

Milton Chen, a Senior Fellow of the George Lucas Educational Foundation, outlines innovations our schools need to employ in his latest book, Education Nation.

*The Technology leverage point:* From the Internet to mobile devices, online curricula and courses, technology-based content, platforms, and experiences are enabling students to learn more, earlier.

*The Leverage of Time and Place:* Learning can now truly be 24/7/365 rather than limited to what happens in a classroom 6 hours a day, 5 days a week, 31 weeks a year.

*The Leverage point of Youth:* Today's youth are becoming the first generation to carry powerful mobile devices wherever they go. They are carrying this change in their pockets. They are used to instant access to information and their entire social network. They learn in a fundamentally different way, and they are teaching us how to restructure this new educational system.

### Step 4: Facilitate seamless transitions between life, work and credit/degrees

We offer three examples:

- The California Institute for Regenerative Medicine has developed the country's first high school stem cell curriculum, which will be pitched to science teachers nationally this fall, and is already being taught at a handful of San Francisco Bay Area high schools.

- Arlington County - in the three high schools (all included in the 100 top HS in the country) German is taught in the learning lab at each school by a university professor because student course enrollment at each school is not high enough to support a district paid full time German teacher. The class is virtually linked to students in Germany with real-time conversations in German.
- Westport, Conn. — The school district’s math teachers decided to rewrite the algebra curriculum, limiting it to about half of the 90 concepts typically covered in a high school course in hopes of developing a deeper understanding of key topics. They replaced the math textbooks with their own custom-designed online curriculum; the lessons are written in Westport and then sent to a program in India, called [HeyMath!](#), to jazz up the algorithms and problem sets with animation and sounds.

### Step 5: Inter-organizational Collaboration

At the Economic Security Symposium, one **speaker** stated that two-thirds of science and technology innovations involve some kind of inter-organizational collaboration.

**Comment [KO1]:** Because of the non-attribution, you cannot name David or Leon unless you have gotten their permission to do so. Let me know and I can reinsert their names as appropriate.

We must begin to employ innovative ways to serve those who have been underserved by traditional education methods. Now more than ever, it is critical that **schools partner with universities, the national security, military and intelligence communities** to support NetGen students as the US economy shifts into a global marketplace, making education not a luxury but a necessity to remain competitive in the work force.

Another speaker, an expert in national security issues, challenges listeners to "Be provoked to architecture of the future, to see across the categories to a comprehensive picture of how things relate." Many of our most advanced research laboratories are located in proximity to nation's struggling inner-city school systems - NY, Chicago, LA, Atlanta – to name just a few. What if we were to link the military training technology that has generated breakthroughs in gaming systems, high-definition video, computer generated graphics, augmented reality and artificial intelligence with high school education programs to push the learning envelope?

American’s leaders and parents must embrace the importance of connecting with students the way they want to connect to keep them engaged and learning.<sup>17</sup>

### American’s Graduate Education Pipeline

Dr. Anne Khadamien, Program Director for the [Center for Public Administration and Policy \(CPAP\)](#) at [Virginia Tech](#) in Alexandria, VA. Her research interests focus on inclusive management, policy networks, organizational culture, and the work of organizations involved in homeland security, and financial regulation.

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<sup>17</sup> Michael Jenkins, Vice President of Admissions and Marketing, Everest University Online

Dr. Khadamien spoke of the intersection of academic theory and the practical application of that theory to public policy, “pracademic” and the effective development and implementation of public programs. She also focused on the fundamental issues of building collaborative capacity in public organization as well as the importance of building a robust, dedicated public service.

#### Graduate Education as a Pracademic Exercise

Traditional graduate education presumes that the student will spend one to five years or more on campus immersed in graduate level classes and research. This model fits a number of students seeking graduate degrees, particularly those seeking research, teaching and scholarly occupations as their life’s work. But there is another world. This world is populated by individuals who also seek graduate degrees but do not have the luxury, or prefer to work and attend graduate school at the same time. They seek the scholarly skills, knowledge and insights but want to apply this knowledge in private and public institutions. For these individuals a pracademic graduate education is the answer. Graduate education focused on the pracademic holds great potential for promoting the type of research and practical skills that are essential for engaging the most complex public policy issues. Strong graduate education can foster the collaborative and networking capacities essential for sophisticated research, policy development and implementation, and can reinvigorate a professional commitment to public service informed by the institutional complexities and policy dynamics of the public arena. While graduate education takes on multiple forms at Virginia Tech, the focus is on the scholarly development of graduate students as practitioners. These graduate students are often part time, but deeply committed to growth as a scholar.

Here, the focus is on the full time practitioner taking one or two classes per semester in a graduate program, usually several years after completing an undergraduate degree. Paul Posner (2009) and others have used the term “pracademic” to describe the practitioner/scholar. These individuals are primarily part time students in the early to mid career phase of life. They seek continuous engagement between the theoretical and abstract and the practical and real. Classroom setting combines the daily experience of leading, managing, policy development with the theories of organizational dynamics, public policy processes, institutional characteristics, motivation, etc. The discussions are a continuous process of considering theoretical explanations in the context of daily experience. The benefit can be a more realistic grounding of research questions and scholarship, and a means to reconsider, re-conceptualize, and reframe the organizational, policy and leadership challenges of public policy.

#### Graduate Education Builds Conceptual Thinking and Critical Thinking Skills

A centerpiece of graduate education, particularly in this context, is the emphasis on the capacity for conceptual thinking and for critical analysis. The ability to pull back from the minutia of the

immediate and to see broader patterns, constraints, influences on the policy process is vital for the ability to see the benefits of collaboration and the points of potential collaboration. The ability to question the accepted, or to scrutinize options, whether theoretical or practical, in a systematic manner is central to graduate education, essential for working in collaborative settings, and essential in the emerging world of interagency collaboration and cooperation. In this world agencies and their employees realize that lasting solutions to complex problems often require horizontal collaboration between and among multiple agencies. . . .

Knowledge continues to increase at a rapid rate. Organizational and individual success often requires a deep, sophisticated knowledge of a field. Graduate education focused on the pracademic also contributes to deep, sophisticated knowledge of a field. Whether for homeland security, national security, air traffic control, or any number of other fields of study, graduate education offers students the opportunity to dig deeply into the empirical dimensions of key public policy areas, through their independent research, or through course work.

The focus on collaborative skills for decision making and consensus building, either contingently or longer term, critical analytic skills, and deep sophisticated knowledge of a field are essential components for leading within the complex policy arenas of today.

In policy arenas as complex as national security, homeland security, education and the like, the stove-piped approaches to policy development and implementation no longer apply. As we have learned in the post 9-11 era, the capacity to share information, make decisions jointly, deploy resources collectively and strategically, all require the ability to lead collaboratively across different agencies, different jurisdictions, even different countries.

Complexity requires collaboration and inclusion. This means:

- Understanding multiple arenas, sectors, jurisdictions (deep knowledge)
- Understanding the points of interaction, tensions, compatibilities (conceptual capacities)
- Forging discussion, alternative ways of understanding problems, forging consensus (analytic capacities)
- Decision making (experience)

Two pertinent examples of this are President Obama's recently announced policy to eliminate homelessness in America within a decade and the work of the Project on National Security Reform whose goal is to achieve reform of the nation's national security system.

In August 2010, President Obama announced a policy to end homelessness in America within a decade. This can only occur if multiple agencies collaborate and combine their talents and resources to tackle the complex and difficult set of issues that contribute to homelessness.

On June 22, the lead Cabinet secretaries from the United States Interagency Council on Homelessness (USICH) – from the U.S. Departments of Housing and Urban Development (HUD), Labor (DOL), Health and Human Services (HHS), and Veterans Affairs (VA) – joined Executive Director of the USICH Barbara Poppe to unveil and submit to the President and Congress the nation’s first comprehensive strategy to prevent and end homelessness. . . . By combining permanent housing with support services, federal, state, and local efforts have reduced the number of people who are chronically homeless by one-third in the last five years.

The Project on National Security Reform, a non-profit organization dedicated to reforming the nation’s national security system, also has identified interagency collaboration as an essential component for assuring the nation’s security. In the global world national security means using all the elements of national power to achieve a peaceful world. This occurs not just as a result of military might, but requires a sound and vibrant economy, an education system that produces well educated individuals who can think critically and conceptualize alternatives, and citizenry that understands the power of assisting other nations to achieve economic and political. Thus those agencies involved in national security functions must work together to assure that all the elements of national power are coordinated to assure our country’s national security.

#### Building a Vibrant and Effective Public Service

Graduate education focused on the pracademic can also be essential for rebuilding a commitment to the public service. A professional commitment to public service requires an understanding of the complexity of governance, the challenges of governing. Graduate education can provide this deep understanding. It also provides insight into the evolving role of government and agencies and evolving relationship of government with the private sector, with citizens, with contracting partners, as well as with the other nations of the world.

The challenges of accountability are central to effective and efficient government. Accountability is a term everyone uses, but we often cannot agree on what it might mean in practice. If we are to govern in more collaborative ways, we will need more creative ways of demonstrating accountability for joint and multi-partner efforts, including efforts to broaden and improve performance measurement.

There are also the challenges of governing to protect fundamental values. All policy making involves balancing priorities and preferences, as well as balancing principles, such as security and privacy. Graduate education focused on deep knowledge, conceptual capacity and critical analytic skills creates a foundation for engaging in this complex balancing effort in an informed and meaningful way.

By challenging students to think deeply and broadly about the complex issues of our times, graduate education provides a means to strengthen the abilities of those in public service to analyze and identify the root causes of problems and then working collaboratively to fashion effective and efficient solutions to the problems at hand. This enhanced capacity to make government function better helps increase citizens' belief and faith in their government.

### **The Results for Public Organizations**

As this article has discussed and described, a well educated workforce is essential for economic growth and for effective and efficient government. A real life example of how these factors play out is found in the work of Dr. Lenora Peters Gant who manages an academic outreach program for the Office of the Director of National Intelligence (ODNI), on behalf of the U. S. Intelligence Community. Dr. Gant has built an academic outreach program which now extends to over 30 colleges and universities. Established in 2004, the Center of Academic Excellence program in national securities studies was created to support the intelligence community need for multiple sources of well educated young professionals to fill the many interesting and exciting professions in the intelligence community. The program now includes over 30 colleges and universities across America.

Unlike a lot of academic programs or partnerships which tend to emphasize immediate results, this program focuses on building long-term partnerships with colleges and universities in mission critical occupations to help assure multiple sources of well educated college graduates to work for the intelligence agencies of the United States. This program provides competitive grants to college and universities to encourage the development of curricula in a variety of scientific and technical areas, foreign languages, cultural immersion, and similar studies. This partnership, now in its seventh year, helps provide a supply of well qualified candidates to intelligence agencies.

The program's goals are three-fold:

- To develop long-term academic partnerships with accredited colleges and universities that have diverse student populations and courses of academic study that align with the intelligence community's core skill requirements;
- To provide financial and technical support to these educational institutions so that they can shape curricula to meet specific intelligence community needs, and
- To leverage and cultivate intelligence community relationships with faculty and students of those institutions to ensure that the intelligence community has a diverse, highly qualified and motivated applicant pool for its mission critical occupations.

The program has six key strategic criteria and program components. They are;

## 6 KEY STRATEGIC CRITERIA AND PROGRAM COMPONENTS

### 1. IC Related Curricula in Core Skills Related Disciplines

CAE Institutions must: Design, develop and reshape curricula in disciplines that support IC mission critical skills and competencies.

### 2. Foreign Travel/Study Abroad/Cultural Immersion or Awareness

CAE Institutions must: Implement a competitive process and program to develop competencies in regional and international expertise, critical languages and cultural awareness.

### 3. IC Regional Colloquium/Seminar

CAE Institutions must: Develop and host a National Security Colloquium in conjunction with consortium institutions in the institution's geographic area to promote awareness about IC mission, IC careers, value of public service, co-ops, internships and opportunities for scholarships to study in IC related fields.

### 4. Pre-collegiate and High School Outreach

CAE Institutions must: Develop and host high school outreach programs to attract talent to National Security related fields of study. Promote awareness about the IC mission and functions.

### 5. National Security Related Research

As applicable, CAE institutions will: Conduct national security related research in support of building intellectual capital in interdisciplinary fields of study including the Science, Technology, Engineering and Mathematics (STEM) fields.

### 6. Mandatory Reporting - Assessment and Evaluation

CAE Institutions must: Conduct assessments, track metrics to ensure return on investment; report findings and linkages in accordance with ODNI guidance that focuses on an IC workforce "prepared for 21st Century challenges."

The ODNI program has provided an additional benefit for the colleges, the students and for the intelligence community. It has served to educate students, professors and other citizens about the functions of government generally and the intelligence community specifically. In a time when many citizens find their government complex and difficult to understand, this program had made understanding the role and functions of government easier.

### Conclusions

We conclude as we began. A vibrant, growing economy that provides jobs for American's citizens is an essential component of our national security. A critical success factor for such an economy is a well educated workforce, equipped to deal with the complexities of the 21<sup>st</sup> century. We all have a stake in assuring that our children and our neighbor's children are well educated. The security of our nation demands this commitment.