

**New Center Proposal
 Center for Cyber, Intelligence, and Security Studies
 The Citadel**

Summary

The Citadel requests to implement a new Center for Cyber, Intelligence, and Security Studies upon Commission approval. Per Commission policy, new centers require approval if the institution intends to request or receive appropriations from the state. However, institutions also request approval if they plan to seek external funding such as federal grants. The Citadel is seeking approval for the Center in order to request that the U.S. National Security Agency (NSA) and Department of Homeland Security (DHS) designate the Center as one of the National Centers of Academic Excellence in Information Assurance (IA) / Cyber Defense (CD). The following chart outlines the stages of approval for the proposal; the Advisory Committee on Academic Programs (ACAP) voted to recommend approval of the proposal. The full program proposal is attached.

Stages of Consideration	Date	Comments
Center Proposal Received	8/1/15	Not Applicable
Comments and suggestions from CHE staff sent to the institution	8/21/15	Staff requested the following proposal revisions: <ul style="list-style-type: none"> • Provide state-level and national data as well as data related to the demographics identified in the narrative to justify the need for the center. • Describe the collaboration with USC in more detail. • Resolve a discrepancy in stating that the proposed center will be the only NSA/DHS center of Academic Excellence in SC • Identify the physical facilities needed for the center. • Write out NSA, DHS, IA and CD the first time they are mentioned • Complete the cost chart and provide a budget justification.
ACAP Consideration	9/10/15	The Citadel's representative explained that the Center will function as an interdisciplinary collaborative space and that The Citadel is partnering with the College of Charleston for the Center. She also addressed the Center's funding and agreed to a request from ACAP members to revise the proposal to clarify the funding sources. ACAP voted to approve the proposal.
Program Proposal Withdrawn	9/17/15	The proposal was withdrawn by the institution.

Stages of Consideration	Date	Comments
Revised Program Proposal Received	3/17/16	The revised proposal, which changed the name of the Center from Cybersecurity Education and Research to Cyber, Intelligence, and Security Studies, addressed requested revisions. To clarify funding sources, the revised proposal includes a cost chart that shows the only funding sources as a reallocation of nominal funds to pay for course releases for the two co-directors. However, the proposal notes that The Citadel has applied for NSA/DHS Center of Academic Excellence designation in Cyber Defense Education. Once approved, The Citadel expects additional NSA/DHS funding opportunities.

Recommendation

The staff recommends that the Committee on Academic Affairs and Licensing commend favorably to the Commission the creation of the Center for Cyber, Intelligence, and Security Studies to be implemented upon approval by the Commission.

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(Only required if the institution intends to request or receive appropriations from the state)

Name of Institution

The Citadel (<http://www.citadel.edu>)

Name of Proposed Center/Institute

Center for Cyber, Intelligence, and Security Studies (<http://www.citadel.edu/root/cce>)

Proposed Date of Implementation

Upon approval by the South Carolina Commission on Higher Education

Site

Department of Mathematics and Computer Science (<http://www.citadel.edu/mathcs>),
School of Science and Mathematics (<http://www.citadel.edu/ssm>), The Citadel

Department of Criminal Justice (<http://www.citadel.edu/root/criminaljustice>), School of
Humanities and Social Sciences (<http://www.citadel.edu/root/shss>), The Citadel

Program Contact Information (name, title, telephone number, and email address)

Dr. Carl Jensen
Professor of Criminal Justice
Director of the Intelligence & Security Studies Program
Phone: 843-953-9680
Fax: 843-953-7085
Email: cjensen1@citadel.edu

Dr. Shankar Banik
Associate Professor of Computer Science
Program Director of MS in Computer Science
Phone: 843-953-5039
Fax: 843-953-7391
E-mail: shankar.banik@citadel.edu

Institutional Approvals and Dates of Approval

Dean and Provost Approval: April 7, 2015

BOV Approval within LEAD Strategic Plan: April 24, 2015

Revised Proposal Faculty Senate Unanimous Approval: March 16, 2016

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Background Information

State the nature and purpose of the proposed center/institute and its centrality to institutional mission. (1500 characters)

The increasing reliance of virtually all aspects of our lives on the Internet has been accompanied by the rising danger of potentially crippling cyberattacks on those infrastructures with attendant devastating effects on the social, economic, and physical welfare of the American people. It has also spawned the proliferation of an unprecedented level of threats from “rogue states,” “lone wolves,” and other features of the ever more interconnected world of the twenty-first century. The national security of the United States is, therefore, dependent on providing the educational opportunities necessary to train the rapidly growing number of skilled professionals in governmental agencies, the armed forces, and the private sector that are required to safeguard the nation against these threats.

The Citadel’s proposed Center for Cyber, Intelligence, and Security Studies seeks to play an important role in that effort. The college’s Department of Mathematics and Computer Science currently offers three academic programs in cybersecurity. At the undergraduate level, it offers a minor in Cybersecurity. At the graduate level, it offers, jointly with the College of Charleston’s Department of Computer Science, a Master of Science degree in Computer Science with a specialization in Cybersecurity. There is a separate Graduate Certificate in Cybersecurity that may be earned by students not seeking a full master’s degree. The Citadel’s Department of Criminal Justice offers four academic programs in Intelligence and Security studies. There is an undergraduate minor in Intelligence Studies, which with nearly 100 students enrolled, is one of the largest on campus. There are also Graduate Certificate programs in both Intelligence and Homeland Security as well as a Master of Arts Program in Intelligence and Security Studies. These interdisciplinary curricular pathways have proven to be quite popular, with many students pursuing careers in military and civilian intelligence.

The conduct and presentation of research is an integral part of The Citadel’s work in these fields. All of our faculty members are actively engaged in research projects. They also actively mentor and often co-author papers with students. Members of The Citadel Cybersecurity Club have, for example, participated annually in several regional competitions and in the CyberPatriot National Youth Cyber Education Program as mentors. Cadets in the Intelligence Studies program constitute one of only twenty-five groups of undergraduate students in the nation who have been chosen to conduct non-classified research with the National Counter Terrorism Center. Students from both sectors of our larger program presented research at The Citadel’s recent Intelligence and Homeland Security Enterprise Conference which attracted prominent practitioners in the field from governmental agencies, private firms, and the academy. (See: <http://www.citadel.edu/root/criminaljustice-2015-ihse-conference>). Through this and other regularly held programs the college leverages its relationship with the many Citadel

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alumni who serve in the military, public, and private intelligence world and is a major reason why alumni from our programs enjoy high rates of employment in the field.

The cyber, intelligence and securities study program at The Citadel has received strong support from the institution. The development of a center of excellence for criminal justice, homeland security, and intelligence analysis has been a key part of The Citadel's Strategic LEAD (Leadership Excellence and Academic Distinction) Plan 2018 since its inception three years ago. Last year, the plan was refreshed with the addition of a more robust cyber dimension that makes possible the creation of the broader and better integrated center proposed here.

It has also benefitted from generous support (nearly \$2,000,000 in grants) secured by The Citadel's Department of Modern Languages from the U.S. Department of Defense to finance the study of Chinese language and culture. In 2016, The Citadel was awarded about \$100,000 from NSA and chosen as the only GenCyber site in South Carolina to date to provide training in cyber education to school teachers.

Approval of the proposed center will provide us with the additional opportunities and resources needed to transform a strong program into an excellent one better to serve the educational, research, and employment needs of The Citadel, the state of South Carolina, and the nation in the increasingly vital cybersecurity and intelligence fields.

An advisory board with leaders from local cybersecurity industry, academia, and state agencies has been established to support our cybersecurity initiatives and the board had its initial meeting in October 2015. The Advisory Board of the School of Humanities & Social Sciences contains several professionals in the field of intelligence who have held high-ranking positions in both the public and private sector. The creation of an integrated executive advisory board, consisting of selected members from each group, is anticipated.

List the objectives of the proposed center/institute. (1000 characters)

The proposed center will

1. Establish an outreach and collaboration program through sharing curriculum with local universities, colleges, technical schools and K-12 schools.
2. Establish a resource hub for students and faculty to promote collaboration and interaction in cybersecurity, intelligence and security studies.
3. Encourage the practice of cybersecurity throughout the college.
4. Encourage student-based and faculty research.
5. Provide an educational program for the advanced development of principled leaders seeking careers in intelligence.
6. Examine the latest strategies for recruiting, developing, motivating, and evaluating personnel in the cyber, intelligence and security employment sectors.
7. Promote ethical behavior in cyber, intelligence, and related fields.
8. Provide a platform to encourage leadership through collaboration.

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Assessment of Need

Provide an assessment of the need for the proposed center/institute for the state, the region, and beyond, if applicable. (1500 characters)

The Citadel has applied for NSA/DHS Center of Academic Excellence (CAE) designation in Cyber Defense Education (CDE). Once approved by NSA/DHS, The Citadel will be the first NSA/DHS CAE-CDE in the Lowcountry. With additional NSA/DHS funding opportunities, and long-term collaboration with the Center for Information Assurance Engineering at the University of South Carolina (which has already received NSA/DHS CAE-CDE and CAE-R designations), the proposed center would coordinate all of our outreach efforts to local high/middle school programs in cybersecurity and training programs for local and state-wide companies that are seeking improved data security.

The Center will also provide a platform to apply for status as an Intelligence Community CAE and will be vital in obtaining Certification for undergraduate and graduate programs by the International Association for Intelligence Education (IAFIE).

In addition, the center will enhance the academic programs in cybersecurity and intelligence to improve the pipeline into graduate programs in the state and to help train needed professionals in the Lowcountry, South Carolina, and the Nation.

Over the past 15 years, there has been a dramatic rise in the need for cyber, intelligence, and security professionals. For example, a 2015 RAND Corporation report discussed the pressing need for an enhanced “Cyber Warrior” workforce (Li and Daugherty, 2015) while a major recruiting firm (Recruiter) recently noted that vacancies for intelligence analysts have increased by 27.30 percent nationwide since 2004 with an expected 20,300 new jobs to be filled by 2018 (Recruiter, n.d.).

In the area of cybersecurity, our national leaders have recognized the need for an agile, highly skilled federal workforce that is capable of responding to a dynamic and rapidly developing array of cyber threats. Due to sophisticated and increased number of attacks in the cyberspace, the demand of cybersecurity professional is growing very rapidly. On August 16, 2015 DefenseOne published an article on “Pentagon to recruit thousands of Cybersecurity Reserve Force.” Recently (January 2, 2016) Forbes published an article on “One Million Cybersecurity Job Openings in 2016.” One of the goals of the proposed center will be to develop programs to satisfy the demand of cybersecurity workforce in the government and industry. The National Security Agency (NSA) and Department of Homeland Security (DHS) have established standard curriculum guidelines for Cyber Defense Education. The standard identifies the required knowledge units and each knowledge unit is described with a set of topics and learning outcomes. The Citadel is following these guidelines in the current cybersecurity education programs. As part of the application process of NSA/DHS Center of Academic Excellence in Cyber Defense Education, The Citadel has ensured that all the courses in Cybersecurity are mapped to NSA/DHS required knowledge units.

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With regard to intelligence, federal security jobs alone grew by 377 percent in the decade following the 9/11 attacks (Highbeam Research, 2011). In addition to the number of public sector jobs available, South Carolina possesses a vibrant private security community (e.g., Booz, Allen, Hamilton; BAE; SAIC; SRA; Northrup Grumman) where compensation can be significant. For example, Sumter, South Carolina is listed by Payscale.com as one of the top 15 cities with the highest salaries for Intelligence Analysts (\$60,000-\$80,393); of note, the positions in Sumter are staffed by contractors from CACI International and SAIC, in addition to military personnel. Other industries hiring intelligence and security studies graduates include peacekeeping and humanitarian operations support, management consultant firms, and state and local law enforcement agencies.

A Partnership for Public Service 2009 report listed the Department of Homeland Security and Department of Defense as the two agencies most likely to hire in the areas of security and protection. This report projected 19,440 individuals to be eligible for retirement and in need of replacement in 2012. All of the major corporations which hire contractors listed above offer positions in South Carolina. In 2013, there were 3,573 defense contracting firms operating in the state accounting for \$3,495,871,419 in total funding (governmentcontractswon.com, n.d.).

The recently created Master of Arts in Intelligence and Security Studies program is expected to attract students from throughout the nation. Its curriculum was developed with the goal of achieving program certification by the International Association for Intelligence Education; as well, the center will serve as a platform for seeking designation as an Intelligence Community Center for Academic Excellence.

Sources

Governmentcontractswon.com. (n.d.). South Carolina defense contractor lists by county United States Government contracts. Retrieved from http://www.governmentcontractswon.com/department/defense/south_carolina_counties.asp.

Highbeam Research. (2011). Assessing risk and resources -- Security jobs soar at federal level, thin out closer to home. Highbeam Research. Retrieved from <https://www.highbeam.com/doc/1P2-29610981.html>.

Li, J. J. and Daugherty, L. (2015). Training cyber warriors. RAND Corporation. Retrieved from http://www.rand.org/content/dam/rand/pubs/research_reports/RR400/RR476/RAND_RR476.pdf.

Recruiter. (n.d.). Career outlook for intelligence analysts. Recruiter. Retrieved from <https://www.recruiter.com/careers/intelligence-analysts/outlook/>.

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Will the proposed center/institute impact any existing programs and services at the institution?

Yes

No

If yes, explain. (1000 characters)

The proposed center will have no negative impact on any current academic programs at The Citadel but will, instead, promote greater interdisciplinary collaboration among the departments and schools.

The proposed center will make our academic programs in cybersecurity, intelligence and security studies and student activities related to these areas more visible. This will help us recruit more students and provide us with more opportunities in education and research.

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List of Similar Centers/Institutes in South Carolina

Name	Institution	Similarities	Differences
<p>Center for Information Assurance Engineering (http://isl.cse.sc.edu/) (CAE-CDE, CAE-R) Director: Dr. Csilla Farkas</p>	<p>University of South Carolina at Columbia (http://www.sc.edu)</p>	<p>Seeking academic excellence in cybersecurity education and research</p>	<p>The proposed center at The Citadel will be a multi-disciplinary center. It will focus on providing The Citadel and the Lowcountry with high quality education and research through its undergraduate and graduate programs in cybersecurity and intelligence studies and will be able to take advantage of the proven administrative skills and international connections in the field of Dr. Carl Jensen who previously founded and directed the Intelligence Community Center of Academic Excellence at the University of Mississippi. Dr. Jensen also brings to the program his past experiences as a naval submarine officer, a special agent in the FBI, and a Senior Behavioral Analyst with the RAND Corporation.</p> <p>Dr. Csilla Farkas, the director of the Center for Information Assurance Engineering, and Dr. Shankar Banik have been working together on projects in cybersecurity for years. Dr. Farkas assisted Dr. Banik with The Citadel's application for NSA/DHS CAE-CDE. The proposed center will continue collaborations with Dr. Farkas and the Center for Information Assurance Engineering at USC.</p>

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Faculty

Provide a brief explanation of any changes in faculty and/or administrative assignment that may be required as a result of the proposed center/institute. (1000 characters)

Initially, a faculty member from the Department of Criminal Justice of the School of Humanities & Social Sciences and a faculty member from the Department of Mathematics and Computer Science of the School of Science & Mathematics will be assigned as Program Directors for the center. They will prepare an annual report routed through their respective Department Heads and Deans to the Provost. Each program director will be given a course reduction from his/her regular teaching load for each semester of the academic year. The program directors will serve as Co-Points of Contact (POCs) for the center.

The courses offered in the graduate programs in cybersecurity are shared between faculty at The Citadel and the College of Charleston. They include Dr. Shankar Banik, a specialist in network security and cybersecurity education, Dr. George Rudolph, a specialist in embedded systems security, Dr. Deepti Joshi, a specialist in big data analytics, and Dr. Aspen Olmsted (College of Charleston faculty), a specialist in software security. All graduate and undergraduate courses in intelligence and security are taught by Citadel faculty. They include: Dr. Carl Jensen, a nationally recognized scholar in intelligence studies and a retired Supervisory Special Agent of the FBI and former Senior Behavioral Scientist with the RAND Corporation; Michael Brady, a specialist in intelligence collections systems and former Director of the White House Emergency Operations Center; Edward Lugo, a specialist in cyber forensic and former Special Agent with the U.S. Secret Service; Melissa Graves, a specialist in intelligence analysis and former Interim Director of the IC CAE at the University of Mississippi; and Kristy Johnson, a specialist in pathology and with sub-field in bioterrorism.

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Library and Learning Resources

Identify current library/learning collections, resources, and services necessary to support the proposed center/institute and any additional library resources needed. (500 characters)

The Citadel library currently subscribes to the ACM Digital Library and IEEE Xplore databases. Faculty and students in cybersecurity have also been using other online resources for literature and publications.

With regard to intelligence and security studies, the new MA program has been approved to obtain new resources to support the Center's mission.

Physical Resources

Identify any new equipment needed for the proposed center/institute. (500 characters)

No new resources are needed at this point.

Multidisciplinary facilities and classrooms to support the activities of the center are in planning. They include a cyberlab, a national security classroom, and a secure work area within the already planned facility enhancements of the new Capers Hall which upon completion will be the physical hub of the program.

Will any extraordinary physical facilities be needed to support the proposed center/institute?

Yes

No

Identify the physical facilities needed to support the center/institute and the institution's plan for meeting the requirements, including new facilities or modifications to existing facilities. (1000 characters)

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Financial Support

Estimated New Costs by Year						
Category	1st	2nd	3rd	4th	5th	Total
Program Administration						
Faculty and Staff Salaries	\$4,600	\$4,600	\$4,600	\$4,600	\$4,600	\$23,000
Graduate Assistants						
Equipment						
Facilities						
Supplies and Materials						
Library Resources						
Other*						
Total						
Sources of Financing						
Category	1st	2nd	3rd	4th	5th	Total
Tuition Funding						
State Funding (i.e., Special State Appropriation)*						
Reallocation of Existing Funds*	\$4,600	\$4,600	\$4,600	\$4,600	\$4,600	\$23,000
Federal Funding*						
Other Funding*						
Total						
Net Total (i.e., Sources of Financing Minus Estimated New Costs)	\$4,600	\$4,600	\$4,600	\$4,600	\$4,600	\$23,000

*Provide an explanation for these costs and sources of financing in the budget justification.

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Budget Justification

Provide a brief explanation for the other new costs and any special sources of financing (state funding, reallocation of existing funds, federal funding, or other funding) identified in the Financial Support table. (1000 characters)

Note: Only provide this budget justification if any other new costs, state funding, reallocation of existing funds, federal funding, or other funding are included in the Financial Support table.

The only costs associated with this proposal are two course releases for the co-directors of the Center. These will be funded through re-allocation of funds.

Evaluation and Assessment

Provide an outline of how the proposed center/institute will be evaluated. Identify assessment tools or software used in the evaluation. Explain how assessment data will be used. (1500 characters)

The Citadel will utilize multiple measures to assess the effectiveness of the Center, including student enrollment trends, research productivity, faculty development, and participant learning outcomes.

Enrollment data from the undergraduate minors in cybersecurity and intelligence; the cybersecurity specialization in the MS in Computer Science and the graduate certificates in cybersecurity (offered jointly with the College of Charleston), intelligence and homeland security; and the MA in Intelligence and Security Studies, placement and internship data will be collected by Program Directors to study the trends and identify any strengths or weaknesses for future enhancement of the center.

Moreover, the number of grants received, conference presentations, and papers published in peer-reviewed journals and conference proceedings, and data given in the reports for research projects and outreach activities will be used to evaluate the success of the center.

Outreach activities will utilize surveys as well as pre/post instruments to evaluate the effectiveness and impact of the activities. The Citadel will also utilize survey instruments to assess the impact of the center's programs on faculty development.