Committee Members: Nicole Washington, Chair
Ann Marie Cavazos, Kristin Harper, David Lawrence, and Rochard Moricette

AGENDA

I. Call to Order
   Trustee Washington

II. Roll Call
   Ms. Valeria Singleton

III. Minutes for December 4, 2019 Meeting
   Trustee Washington

ACTION ITEMS

IV. Bachelor of Science in Cybersecurity
    Dr. Maurice Edington

V. Master of Science in Cybersecurity
   Dr. Maurice Edington

VI. Request for Leave Without Pay – Rhoda Cato
    Dr. Edington

VII. Academic Calendar 2020-2021
     Dr. Edington

VIII. Tenure Upon Appointment – Idongesit Mkpong-Ruffin
      Dr. Edington

INFORMATION ITEMS

IX. Student Affairs Update
    • Southern Scholarship Housing
      Dr. Hudson
    • Student Affairs Update
      Dr. Hudson
    • Anti-Hazing Update
      Mr. Bryan Smith

X. Academic Affairs Update
    • Faculty Workload Study
      Ms. Barrington
    • Research Update
      Dr. Weatherford
    • MS Construction Management and Engineering Technology
      Dr. Edington
    • Licensure Pass Rates
      Dr. Edington
    • Highlight of Key Initiatives
      • Freshmen Studies

XI. Adjournment
Subject: Minutes for December 4, 2019 Meeting

Proposed Board Action: In accordance with the Florida Statutes, a governmental body shall prepare and keep minutes or make a tape recording of each open meeting of the body.

Attachments: Yes
   1. Minutes for December 4, 2019
The meeting was called to order by Trustee Nicole Washington. Ms. Valeria Singleton called the roll and the following committee members were present: Ann Marie Cavazos, Kristin Harper, David Lawrence, Rochard Moricette, and Nicole Washington. A quorum was established.

Trustee Cavazos moved to approve the minutes for the meetings on September 18, 2019, and October 17, 2019. The motion was seconded by Trustee Moricette and the motion carried.

Tenure Upon Appointment – The applications for Tenure Upon Appointment for Dr. Richard Alo and Dr. Allyson Watson were presented and discussed. Trustee Harper moved to approve the request for Tenure Upon Appointment for Dr. Richard Alo and Dr. Allyson Watson. The motion was seconded by Trustee Moricette and the motion carried.

- Trustee Washington inquired about the policy for post-tenure review. Dr. Edington stated that the University does not have a post-tenure review policy.

Regulation 2.015, Admissions – Dr. Hudson presented the amendment to Regulation 2.015 (Admissions). The amendment will update the current requirements to include readmission of service members. Trustee Moricette moved to approve the revisions to Regulation 2.015. The motion was seconded by Trustee Cavazos and the motion carried.

Regulation 2.030, Student Activities – Dr. Hudson presented the amendment to Regulation 2.030 (Student Activities). The amendment will clarify committees, reporting structures, and processes. In response to a question regarding where the regulations are maintained and how they are updated, Dr. Hudson stated that regulations are housed in Student Affairs in the specific departments and the regulations are posted on the website. The regulations are updated and reviewed on an annual basis as needed. A committee is formed that includes students to review the regulations. The committee’s revisions are sent to the Office of General Counsel for review prior to the regulations being submitted to the Board of Trustees for approval.

Trustee Moricette moved to approve the revisions to Regulation 2.030. The motion was seconded by Trustee Harper and the motion carried.

Trustee Washington briefly discussed the spreadsheet of the Performance Based Funding Metrics that was distributed by Vice President Beverly Barrington. The spreadsheet contains the University’s
2019 actual ratings, 2020 goals, 2019 points earned and the BOG benchmarks. The document has been posted to the website.

**Academic Affairs Updates** – The following informational updates were provided:

- Provost Edington provided updates on the key initiatives.
  - A handout was distributed to the Board of Trustees that provided context for the informational update. The purpose of handout is to give the Board a better understanding of the initiatives and funding allocated to achieve these goals.
  - Provost Edington and Dr. Hudson provided an update on the efforts to improve outcomes on the performance based funding (PBF) metrics to achieve a minimum score of 80 points in 2021. This is the goal that is driving all of efforts to improve on the outcomes.
    - The areas of focus for improvement during the presentation consisted of the four-year graduation rate (PBF #4); academic progress rate (PBF #5); bachelor’s and graduate degrees awarded with PSEs (PBF #6 & #8); and bachelor’s degrees awarded without excess credit hours (PBF #9).
      - During the update on staffing, Trustee Lawson suggested that the timelines for hiring the additional staff (advisors, coaches, counselors, mental health professionals, and SLS instructors) be adjusted in order to fill the positions sooner. In addition, Trustee Washington asked about the recruitment strategy to obtain the talent pool to fill some of the positions. Dr. Hudson stated that the positions are advertised nationally, but we are competing with other universities that are also recruiting for the same positions.
      - Trustee Harper asked about the contingency plan if the funding was not renewed at the same level. Provost Edington stated that the University made an institutional commitment using other funds for these initiatives.

- The Universities of Distinction Legislative Budget Request was briefly discussed. The Universities of Distinction is another funding source designed to support the nine non-preeminent institutions in the State University System. Dr. Robinson stated that this funding is recurring whereas the performance based funding is non-recurring.

- Dr. Charles Weatherford provided an update on the Division of Research Data to include the research and development spending, awards received, proposals submitted, and facilities and administration (administrative funding) amount.

- Dr. Sundra Kincey provided an update on two proposed cybersecurity programs. The new programs will have an impact on PBF metrics #6, #8, #10, and #12. The proposal will be submitted for approval during the March 2020 Board of Trustees meeting.

- Dr. Carl Goodman provided an update on Textbook Affordability to include the 2019 estimated College Board cost and key strategies to increase textbook affordability. FAMU
currently ranks third in the SUS for affordable books and supplies. The overall goal is to provide a cost savings of $300K by 2020-2021.

- Dr. Patricia Green-Powell provided an update on the Medical Marijuana Education & Research Initiative to include the organizational structure, revenues and expenses, project goals and overview, and progress. In addition, Dr. Green-Powell stated that 14 mini-grants were awarded to faculty members.

**Student Affairs Updates** – The following informational updates were provided:

- Updates were provided on the IGNITE program, Anti-Hazing Initiative, and the Financial Aid Debt Reduction System Upgrade:
  - Ms. Teri Little-Berry provided an update on the IGNITE Transfer Program to include the headcount enrollment and transfers by college/school. Ms. Little-Berry stated that BOG metric #10 will change this year to “Bachelor’s Degrees Awarded to FCS AA Transfers.” In addition, Ms. Little-Berry stated that the new transfer specialists will begin employment in January 2020 and 34 visits were conducted this term with partner institutions.

- Mr. Bryan Smith provided an update on the hazing prevention initiatives.
  - This semester fraternity and sorority life facilitated intake for six organizations. Hazing prevention workshops and individual organizational presentations were provided through the use of the Alivetek online hazing prevention course and by providing the hazing regulation to all students during the registration process.

- The Student Affairs team and the Oracle team provided an update on Student Financial Planning (SFP). Support for the current version (Student Financials 9.0) will end in 2030, so FAMU needs to begin the process of finding a new Enterprise Resource Planning (ERP) Cloud. SFP is a cloud-based financial aid system that manages each student’s financial plan individually, automatically, and in real-time; providing visibility into their entire program; supporting better informed financial decisions; and optimizing student outcomes. The solution was developed with the student as the primary focus. In addition, this product will support strategic priority #5 regarding First-Class Business Infrastructure and support the needs of our constituents.

There being no further discussion, the meeting was adjourned at 10:05 a.m.

Respectfully submitted,

Nicole Washington, Committee Chair
Subject: Bachelor of Science in Cybersecurity (CIP Code 11.1003)

Proposed Board Action: The Department of Computer and Information Sciences (CIS) at Florida A&M University proposes to offer a Bachelor of Science in Cybersecurity (CyS) program. This program is designed to satisfy the Accreditation Board for Engineering and Technology, Inc. (ABET) criteria for Cybersecurity, and is based on the ACM Cybersecurity Curricula 2017 Guideline. The program will provide breadth through fundamental courses in the science of cybersecurity, the practice of cybersecurity, and the social impacts of cybersecurity. The student may achieve depth through courses in areas such as: digital forensics; cyber law and ethical hacking; cybersecurity risk management and audit; and cryptography.

The goal of the B.S. program in Cybersecurity is to prepare students to meet the cybersecurity needs of business, government, healthcare, education, and society. Program graduates will possess the skills and knowledge to assume appropriate entry-level professional positions, and to grow into leadership positions or pursue research or graduate studies in the field. Upon graduation, students may seek careers in positions such as: Security Analyst, Security Engineer, Security Architect; Security Administrator, etc. The program will be offered face-to-face and online. It requires the completion of 120 credit hours.

Estimated enrollment projections for years one to five are as follows:

<table>
<thead>
<tr>
<th>IMPLEMENTATION TIMEFRAME</th>
<th>PROJECTED ENROLLMENT</th>
</tr>
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<tbody>
<tr>
<td>YEAR 1</td>
<td>12</td>
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<tr>
<td>YEAR 2</td>
<td>24</td>
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<tr>
<td>YEAR 3</td>
<td>32</td>
</tr>
<tr>
<td>YEAR 4</td>
<td>42</td>
</tr>
<tr>
<td>YEAR 5</td>
<td>46</td>
</tr>
</tbody>
</table>

Attachments: Yes
1. FAMU BS Cybersecurity Proposal
Board of Governors, State University System of Florida

Request to Offer a New Degree Program
(Please do not revise this proposal format without prior approval from Board staff)

<table>
<thead>
<tr>
<th>Florida A&amp;M University</th>
<th>Fall 2020</th>
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</thead>
<tbody>
<tr>
<td>University Submitting Proposal</td>
<td>Proposed Implementation Term</td>
</tr>
<tr>
<td>Science and Technology</td>
<td>Computer &amp; Information Sciences</td>
</tr>
<tr>
<td>Name of College(s) or School(s)</td>
<td>Name of Department(s)/Division(s)</td>
</tr>
<tr>
<td>Cybersecurity</td>
<td>Bachelor of Science in Cybersecurity</td>
</tr>
<tr>
<td>Academic Specialty or Field</td>
<td>Complete Name of Degree</td>
</tr>
</tbody>
</table>

11.1003
Proposed CIP Code

The submission of this proposal constitutes a commitment by the university that, if the proposal is approved, the necessary financial resources and the criteria for establishing new programs have been met prior to the initiation of the program.

March 5, 2020
Date Approved by the University Board of Trustees

President

2/18/2020
Date

Signature of Chair, Board of Trustees

Date

Vice President for Academic Affairs

2/18/2020
Date

Provide headcount (HC) and full-time equivalent (FTE) student estimates of majors for Years 1 through 5. HC and FTE estimates should be identical to those in Table 1 in Appendix A. Indicate the program costs for the first and the fifth years of implementation as shown in the appropriate columns in Table 2 in Appendix A. Calculate an Educational and General (E&G) cost per FTE for Years 1 and 5 (Total E&G divided by FTE).

<table>
<thead>
<tr>
<th>Implementation Timeframe</th>
<th>Projected Enrollment (From Table 1)</th>
<th>Projected Program Costs (From Table 2)</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>HC</td>
<td>FTE</td>
</tr>
<tr>
<td>Year 1</td>
<td>12</td>
<td>9</td>
</tr>
<tr>
<td>Year 2</td>
<td>24</td>
<td>18</td>
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<td>Year 3</td>
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<td>Year 5</td>
<td>46</td>
<td>34.5</td>
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<tr>
<td></td>
<td>10,786</td>
<td>372,116</td>
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</table>

Note: This outline and the questions pertaining to each section must be reproduced within the body of the proposal to ensure that all sections have been satisfactorily addressed. Tables 1 through 4 are to be included as Appendix A and not reproduced within the body of the proposals because this often causes errors in the automatic calculations.
INTRODUCTION

I. Program Description and Relationship to System-Level Goals

   A. Briefly describe within a few paragraphs the degree program under consideration, including (a) level; (b) emphases, including majors, concentrations, tracks, or specializations; (c) total number of credit hours; and (d) overall purpose, including examples of employment or education opportunities that may be available to program graduates.

The Department of Computer and Information Sciences (CIS) at Florida A&M University proposes to offer the Bachelor of Science in Cybersecurity (CyS) program. This program is designed to satisfy ABET program accreditation criteria for Cybersecurity and is based on the ACM Cybersecurity Curricula 2017 Guideline\(^1\). The program will provide breadth through fundamental courses in the science of cybersecurity, the practice of cybersecurity, and the social impacts of cybersecurity. The student may achieve depth through elective courses in areas such as: digital forensics; cyber law and ethical hacking; cybersecurity risk management and audit; and cryptography. The program requires the completion of 120 credit hours.

The goal of the B.S. program in Cybersecurity is to prepare students to meet the cybersecurity needs of business, government, healthcare, education, and society. Program graduates will possess the skills and knowledge to assume appropriate entry-level professional positions, and to grow into leadership positions or pursue research or graduate studies in the field. The following objectives have been adopted:

   a. To provide a supportive learning environment that provides students real-world knowledge and work-relevant cybersecurity experiences.
   b. To provide foundational knowledge and experience so that students can adapt to changing contexts in which cybersecurity is relevant and to changes in the technologies of threats and defense strategies.
   c. To encourage life-long learning by encouraging personal professional development, e.g., professional certifications.

Graduates of this program will be equipped to enter career paths such as: Security Analyst, Security Engineer, Security Architect; Security Administrator, etc. Specific SOC 2010 disciplines for CIP 11.1003 include: Computer and Information Systems Managers, Information Security Analysts, Database Administrators, Network and Computer System Administrators, Computer Network Architects, and Computer Network Specialists.

   B. Please provide the date when the pre-proposal was presented to CAVP (Council of Academic Vice Presidents) Academic Program Coordination review group. Identify any concerns that the CAVP review group raised with the pre-proposed program and provide a brief narrative explaining how each of these concerns has been or is being addressed.

The pre-proposal for the Bachelor of Science degree in Cybersecurity was presented to the Council of Academic Vice Presidents (CAVP) Academic Program Coordination Group on Thursday, November 29, 2018 and was approved with no concerns.

\(^1\) https://cybered.hosting.acm.org/wp/
C. If this is a doctoral level program, please include the external consultant’s report at the end of the proposal as Appendix D. Please provide a few highlights from the report and describe ways in which the report affected the approval process at the university.

Not applicable.

D. Describe how the proposed program is consistent with the current State University System (SUS) Strategic Planning Goals. Identify which specific goals the program will directly support and which goals the program will indirectly support (see link to the SUS Strategic Plan on the resource page for new program proposal).

The proposed B.S. Cybersecurity program will provide pathways for undergraduates to obtain knowledge to fill a critical void in cybersecurity professionals nationally and in the State of Florida. The program directly supports the SUS Strategic Planning Goal, Increase the Number of Degrees Awarded in STEM and Other Areas of Strategic Emphasis. It also supports the SUS Strategic Planning Goal, to Increase Degree Productivity and Program Efficiency. Cybersecurity programs will train professionals and a growing workforce dedicated to helping to reduce vulnerability to an organization’s infrastructure, particularly those who hold sensitive information.

<table>
<thead>
<tr>
<th>Table A. Strategic Relevance of Proposed Program</th>
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<tbody>
<tr>
<td>Department Mission</td>
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<tr>
<td>Relevant CST Strategic Initiatives</td>
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<td>Relevant FAMU Strategic Priorities</td>
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<tr>
<td>SUS Goals</td>
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<td></td>
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<tr>
<td>SUS Performance Funding Metrics Impacted</td>
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</tbody>
</table>
E. If the program is to be included in a category within the Programs of Strategic Emphasis as described in the SUS Strategic Plan, please indicate the category and the justification for inclusion.

The Programs of Strategic Emphasis Categories:
1. Critical Workforce:
   - Education
   - Health
   - Gap Analysis
2. Economic Development:
   - Global Competitiveness
3. Science, Technology, Engineering, and Math (STEM)

Please see the Programs of Strategic Emphasis (PSE) methodology for additional explanations on program inclusion criteria at the resource page for new program proposal.

The B.S. Cybersecurity falls under Programs of Strategic Emphasis, Category 3 – STEM. The program is offered in the College of Science and Technology and provides a critical infrastructure component of today’s knowledge economy for which there is a critical workforce shortage. The program is also consistent with national initiatives, such as the National Centers of Academic Excellence and the National Initiative for Cybersecurity Education, which provides resources to develop STEM-related curriculum.

F. Identify any established or planned educational sites at which the program is expected to be offered and indicate whether it will be offered only at sites other than the main campus.

The proposed program will be offered on the main campus, in both face-to-face and online delivery mode.

INSTITUTIONAL AND STATE LEVEL ACCOUNTABILITY

II. Need and Demand

A. Need: Describe national, state, and/or local data that support the need for more people to be prepared in this program at this level. Reference national, state, and/or local plans or reports that support the need for this program and requests for the proposed program which have emanated from a perceived need by agencies or industries in your service area. Cite any specific need for research and service that the program would fulfill.

National demand for programs in cybersecurity is critical locally, regionally, and nationally, as employers need more complicated trained professionals to help reduce the vulnerability in an organization’s infrastructure. The Comprehensive National Cybersecurity Initiative (CNCI) has identified a need of expanding cyber education as one method to strengthen the future cybersecurity environment. Such education provides graduates with keen knowledge and abilities to implement cyber technologies that protect organizations from threats and improve their security practices. The State of Florida also sees cybersecurity as a particular need for the
State with the launch of the Florida Center for Cybersecurity (FC²) who has established a goal of making Florida the national leader in cybersecurity education. To date, FC², renamed CyberFlorida, has stimulated collaboration amongst the 12 SUS institutions resulting in cross-institutional research and sharing of educational resources. The proposed program has been influenced by these collaborations and work on the SUS Advisory Council to CyberFlorida.

National trends show a dramatic rise in cybersecurity degree programs, motivated by a critical workforce shortage, exacerbated by an increasing frequency and sophistication of attacks on society and institutions. The 2018 Cybersecurity Workforce Study (https://www.isc².org/Research/Workforce-Study), reports a global shortage of 2.93 million cybersecurity professionals and, because of existing cyber workforce shortage, over 60% of the companies polled felt a heightened risk of cyberattack. Respondents felt the need for improved skills for entry-level cybersecurity professionals, coupled with employer commitments to continued professional development for cybersecurity personnel. The study found that cybersecurity professionals make about $85K per year, on average; those with security certifications have an average salary of $88K, while those without earn much less—about $67K, on average.

The Bureau of Labor Statistics (BLS) shows national demands for professionals in this industry are growing with the bachelor’s degree as the typical level of entry under the category of Computer and Information Systems Security/Information Assurance (CIP 11.1003). Appropriate job titles aligned under SOC 2010 for this same category include:

- Computer and Information Systems Managers (11.3% expected job growth)
- Information Security Analysts (31.6% expected job growth)
- Database Administrators (9.0% expected job growth)
- Network and Computer Systems Administrators (4.7% expected job growth)
- Computer Network Architects (5.3% expected job growth)
- Computer Network Support Specialists (6.4% expected job growth)

As shown above, growth in employment for professionals in the Computer and Information Systems Security ranges from 4.7% - 31.6% form 2018-2028, with the greatest need for Information Security Analysts (31.6%) and Computer and Information Systems Managers (11.3%). For the management type of positions, a master’s degree (which is also being proposed) could enhance one’s opportunities for such positions.

Similar to national projections by BLS, the State of Florida has great demand for cybersecurity professionals based on projections of the Florida Department of Economic Opportunity (DEO). For the same industry fields noted above, projected increase in work demand ranged from 8.8% - 26.9% from 2019-2027.

- Computer and Information Systems Managers (13.4% expected job growth)
- Information Security Analysts (26.9% expected job growth)
- Database Administrators (13.0% expected job growth)
- Network and Computer Systems Administrators (8.8% expected job growth)
- Computer Network Architects (9.2% expected job growth)
- Computer Network Support Specialists (12.4% expected job growth)

For Florida, the greatest growth is also projected for Information Security Analysts (26.9%) and Computer and Information Systems Managers (13.4%).
Finally, the chronic national shortage of minority professionals in computing remains. The mission of Florida A&M University in meeting the educational needs of African Americans and other minorities, combined with over 130 years of experience in nurturing minorities, gives the University a unique opportunity to address and successfully ameliorate this national problem. The introduction of the cybersecurity program at FAMU, will position State of Florida to show significant gains in the production of minority cybersecurity professionals.

B. Demand: Describe data that support the assumption that students will enroll in the proposed program. Include descriptions of surveys or other communications with prospective students.

Within academic years 2017-2019, over 270 students enrolled in the cybersecurity courses required for the Cyber Defense certificate offered at FAMU. These courses are popular electives for CIS majors (CS, IT and Computer Information Systems) and also for students in Allied Health programs who have a need for trained professionals in Medical Information Privacy and Security. Demand for first these courses is great for both majors and non-CIS majors is also significant: over 16% of the students in the first course, CIS 4360 Introduction to Security, are non-majors. Also, within a tech-driven world, organizations are seeking more and more trained professionals in cybersecurity. According to a February 2012 report of the Council of Advisors on Science and Technology, “The nation will require approximately one million more science, technology, engineering, and math (STEM) professionals than what will be produced at current rates over the next decade.” BLS data suggests that the need for professionals in this area is a dire need. FAMU is responding to this need through the creation of an undergraduate degree in cybersecurity.

C. If substantially similar programs (generally at the four-digit CIP Code or 60 percent similar in core courses), either private or public exist in the state, identify the institution(s) and geographic location(s). Summarize the outcome(s) of communication with such programs with regard to the potential impact on their enrollment and opportunities for possible collaboration (instruction and research). In Appendix C, provide data that support the need for an additional program.

The proposed program has been reviewed by the SUS CAVP Academic Coordination Workgroup and was approved with no concerns at its November 2018 meeting. To date, no B.S. degrees in cybersecurity under CIP code 11.1003 have been awarded in the SUS. However, University of South Florida (USF) and University of West Florida (UWF) have launched undergraduate programs in Cybersecurity under CIP 11.1003. FAMU participates with UWF and other SUS institutions as members of the CyberFlorida SUS Advisory Council which regularly reviews matters of curriculum and expanding access to cybersecurity education. FAMU has collaborated with UNF, FSU and UFW on grants funded by CyberFlorida. A positive outcome from CyberFlorida is the development of a platform for virtual cybersecurity labs, and for opportunities to share curricula through CyberFlorida Advisory Council sub-committees. Prospects for continued and expanded collaboration are positive.

D. Use Table 1 in Appendix A (1-A for undergraduate and 1-B for graduate) to categorize projected student headcount (HC) and Full Time Equivalents (FTE) according to primary sources. Generally undergraduate FTE will be calculated as 30 credit hours per year and graduate FTE will be calculated as 24 credit hours per year. Describe the rationale underlying enrollment projections. If students within the institution are expected to change majors to enroll in the proposed program at
its inception, describe the shifts from disciplines that will likely occur.

New students for the Cybersecurity program are anticipated from currently enrolled students in the lower division (freshmen and sophomores) programs offered in the FAMU CIS Departments, first-time-in-college students (FTICs), and FCS transfers (AA and non-AA transfers) during the first year of implementation. As the program grows, enrollment is anticipated greatly from FTIC students, FCS students (particularly AA transfers), and working professionals. Targeted recruitment initiatives will be launched to attract high school and FCS students.

E. Indicate what steps will be taken to achieve a diverse student body in this program. If the proposed program substantially duplicates a program at FAMU or FIU, provide, (in consultation with the affected university), an analysis of how the program might have an impact upon that university’s ability to attract students of races different from that which is predominant on their campus in the subject program. The university’s Equal Opportunity Officer shall review this section of the proposal and then sign and date Appendix B to indicate that the analysis required by this subsection has been completed.

FLORIDA A&M UNIVERSITY
NON-DISCRIMINATION POLICY STATEMENT

It is the policy of Florida A&M University that each member of the University community is permitted to work or attend class in an environment free from any form of discrimination including race, religion, color, age, disability, sex, sexual harassment, sexual orientation, gender identity, gender expression, marital status, national origin, and veteran status as prohibited by State and Federal Statutes. This commitment applies to all areas affecting students, employees, applicants for admission and applicants for employment. It is also relevant to the University’s selection of contractors, suppliers of goods and services and any employment conditions and practices.

III. Budget

A. Use Table 2 in Appendix A to display projected costs and associated funding sources for Year 1 and Year 5 of program operation. Use Table 3 in Appendix A to show how existing Education & General funds will be shifted to support the new program in Year 1. In narrative form, summarize the contents of both tables, identifying the source of both current and new resources to be devoted to the proposed program. (Data for Year 1 and Year 5 reflect snapshots in time rather than cumulative costs.)

Year one of the Cybersecurity program will implemented using mainly existing resources and two new faculty hires. Additionally, reallocated monies will be utilized for administrative and technical support. By year five, it is anticipated that monies will have been allocated for the following:

a. Lab Manager
b. Continuing of support for existing faculty
c. One new faculty hire
d. Graduate assistantships to support faculty in the development, delivery and evaluation of instruction and laboratories.

e. General operating and OPE dollars

f. Additional physical space

B. Please explain whether the university intends to operate the program through continuing education, seek approval for market tuition rate, or establish a differentiated graduate-level tuition. Provide a rationale for doing so and a timeline for seeking Board of Governors’ approval, if appropriate. Please include the expected rate of tuition that the university plans to charge for this program and use this amount when calculating cost entries in Table 2.

The program will not be operated through continuing education.

C. If other programs will be impacted by a reallocation of resources for the proposed program, identify the impacted programs and provide a justification for reallocating resources. Specifically address the potential negative impacts that implementation of the proposed program will have on related undergraduate programs (i.e., shift in faculty effort, reallocation of instructional resources, reduced enrollment rates, greater use of adjunct faculty and teaching assistants). Explain what steps will be taken to mitigate any such impacts. Also, discuss the potential positive impacts that the proposed program might have on related undergraduate programs (i.e., increased undergraduate research opportunities, improved quality of instruction associated with cutting-edge research, improved labs and library resources).

The B.S. Cybersecurity will have very little impact on existing programs. The majority of new enrollments are expected from FTIC and transfer students, and students in the university who have not declared an official major but are taking lower-level CIS courses. Many of the cybersecurity courses have already been developed and utilized within existing curricula. Some faculty time and effort will be reallocated for the new program. However, that will be mitigated by the hiring of two new faculty with CIS. In addition to full-time faculty, students will be exposed to cybersecurity professionals who can provide valuable knowledge as it related to Cybersecurity competencies, role modeling, and connection to the workplace. Also, the hands-on nature of the Cybersecurity program supports active-learning approaches that are currently adopt for other programs within CIS.

D. Describe other potential impacts on related programs or departments (e.g., increased need for general education or common prerequisite courses, or increased need for required or elective courses outside of the proposed major).

NA

E. Describe what steps have been taken to obtain information regarding resources (financial and in-kind) available outside the institution (businesses, industrial organizations, governmental entities, etc.). Describe the external resources that appear to be available to support the proposed program.

FAMU is an active member of the CAE community, which can be utilized as a source of increased awareness of funding opportunities through federal agencies. The CIS department is currently using shared resources in Florida CyberHub to create virtual cybersecurity lab
experiments. Additional resources are provided through the NSF-funded National Cyberwatch Center\(^2\).

IV. Projected Benefit of the Program to the University, Local Community, and State

Use information from Tables 1 and 2 in Appendix A, and the supporting narrative for “Need and Demand” to prepare a concise statement that describes the projected benefit to the university, local community, and the state if the program is implemented. The projected benefits can be both quantitative and qualitative in nature, but there needs to be a clear distinction made between the two in the narrative.

The introduction of the B.S program in Cybersecurity at Florida Agricultural and Mechanical University will provide opportunities for all students to be trained in a discipline to meet growing demands of today’s workforce. As new technology emerges, more individuals trained in cybersecurity will be critical. Implementing tools based on industry need into a four-year curriculum provides solutions to help organizations overcome or respond to vital threats from existing and emerging technology. To train students more effectively, specific focus on cybersecurity along with a liberal arts education provides graduates with critical thinking skills to conduct comprehensive risk assessments to reduce incidents related to cyber threats.

Job demand as indicated by Bureau of Labor Statistics and Florida Department of Economic Opportunity shows tremendous growth in this area, in particular for Information Security Analysts and Computer Information and Systems Managers. A bachelor of science degree in Cybersecurity at FAMU will also significantly elevate the participation of minorities in cybersecurity in diverse aspects of cybersecurity. Despite a decades-long national goal of achieving a fully inclusive workforce, minorities, in particular African Americans, remain highly underrepresented in the fields of science and engineering and especially underrepresented in computer science and cybersecurity. While initial projections for enrollment for the first five years (12 students in Y1 growing to 46 in Y5) are conservative, FAMU anticipates enrolling students well above as recruitment for the program expands. Cybersecurity is emerging as an essential component of many academic disciplines. Having the Cybersecurity program at FAMU increases the university’s capacity to meet this critical need nationally.

V. Access and Articulation – Bachelor’s Degrees Only

A. If the total number of credit hours to earn a degree exceeds 120, provide a justification for an exception to the policy of a 120 maximum and submit a separate request to the Board of Governors for an exception along with notification of the program’s approval. (See criteria in Board of Governors Regulation 6C-8.014)

This section is not applicable.

B. List program prerequisites and provide assurance that they are the same as the approved common prerequisites for other such degree programs within the SUS (see link to the Common Prerequisite Manual on the resource page for new

\(^2\) [https://www.nationalcyberwatch.org/programs-resources/complete-cloud-based-lab-solution/](https://www.nationalcyberwatch.org/programs-resources/complete-cloud-based-lab-solution/) (NSF-funded, free access)
program proposal). The courses in the Common Prerequisite Counseling Manual are intended to be those that are required of both native and transfer students prior to entrance to the major program, not simply lower-level courses that are required prior to graduation. The common prerequisites and substitute courses are mandatory for all institution programs listed and must be approved by the Articulation Coordinating Committee (ACC). This requirement includes those programs designated as “limited access.”

If the proposed prerequisites are not listed in the Manual, provide a rationale for a request for exception to the policy of common prerequisites. NOTE: Typically, all lower-division courses required for admission into the major will be considered prerequisites. The curriculum can require lower-division courses that are not prerequisites for admission into the major, as long as those courses are built into the curriculum for the upper-level 60 credit hours. If there are already common prerequisites for other degree programs with the same proposed CIP, every effort must be made to utilize the previously approved prerequisites instead of recommending an additional “track” of prerequisites for that CIP. Additional tracks may not be approved by the ACC, thereby holding up the full approval of the degree program. Programs will not be entered into the State University System Inventory until any exceptions to the approved common prerequisites are approved by the ACC.

The proposed program will propose another set of statewide prerequisites because our program is based on an Information Technology foundation. The proposed prerequisites follow:

MAC XXXX Pre-calculus course  
STA X023 or STA X122  
PSY XXXX Any Psychology course  
CNT XXXX Any Network fundamentals course  
COP XXXX Any Programming Course  
COP XXXX Any Object-Oriented Programming Course  
ECO X013

C. If the university intends to seek formal Limited Access status for the proposed program, provide a rationale that includes an analysis of diversity issues with respect to such a designation. Explain how the university will ensure that Florida College System transfer students are not disadvantaged by the Limited Access status. NOTE: The policy and criteria for Limited Access are identified in Board of Governors Regulation 6C-8.013. Submit the Limited Access Program Request form along with this document.

The proposed program will not be a Limited Access program.

D. If the proposed program is an AS-to-BS capstone, ensure that it adheres to the guidelines approved by the Articulation Coordinating Committee for such programs, as set forth in Rule 6A-10.024 (see link to the Statewide Articulation Manual on the resource page for new program proposal). List the prerequisites, if any, including the specific AS degrees which may transfer into the program.

This section is not applicable.
INSTITUTIONAL READINESS

VI. Related Institutional Mission and Strength

A. Describe how the goals of the proposed program relate to the institutional mission statement as contained in the SUS Strategic Plan and the University Strategic Plan (see link to the SUS Strategic Plan on the resource page for new program proposal).

FAMU Mission Statement

“Florida Agricultural and Mechanical University (FAMU) is an 1890 land-grant institution dedicated to the advancement of knowledge, resolution of complex issues and the empowerment of citizens and communities. The University provides a student-centered environment consistent with its core values. The faculty is committed to educating students at the undergraduate, graduate, doctoral and professional levels, preparing graduates to apply their knowledge, critical thinking skills and creativity in their service to society. FAMU’s distinction as a doctoral/research institution will continue to provide mechanisms to address emerging issues through local and global partnerships. Expanding upon the University’s land-grant status, it will enhance the lives of constituents through innovative research, engaging cooperative extension, and public service. While the University continues its historic mission of educating African Americans, FAMU embraces persons of all races, ethnic origins and nationalities as life-long members of the university community.”

Table A. Strategic Relevance of Proposed Program

<table>
<thead>
<tr>
<th>Department Mission</th>
<th>To provide fundamental knowledge and relevant experience to support careers involving the application, advancement and creation of computer and information technology to serve industry, government, and society.</th>
</tr>
</thead>
</table>
| Relevant CST Strategic Initiatives | Initiative 1: Provide high quality academic experiences through excellence in teaching and assessment of student learning.  
Goal 1: Enhance the quality of educational experience of students in all degree programs.  
Strategies 6: Develop new undergraduate degree programs 9: Increase distance learning course offerings. |
| Relevant FAMU Strategic Priorities | Priority 1: Exceptional Student Experience  
Goal 1: Enhance pathways to degree attainment.  
Increase the number of students graduating from programs in areas of high employer demand. |
| SUS Goals | Teaching & Learning  
Increase the Number of Degrees Awarded in STEM and Other Areas of Strategic Emphasis.  
Increase Degree Productivity and Program Efficiency.  
Strengthen Quality & Reputation of Academic Programs and Universities. |
| SUS Performance | Metric 1: Percent of Bachelor’s graduates enrolled or employed ($25,000+) in the U.S. one year after graduation. |
B. Describe how the proposed program specifically relates to existing institutional strengths, such as programs of emphasis, other academic programs, and/or institutes and centers.

FAMU carries the designation of National Center of Academic Excellence in Cyber Defense Education. The designation recognizes the strength of the cyber security certificate curriculum, which was shown to map to the NICE framework. The FAMU Center for Cybersecurity was established in 2008 (as FAMU Center for Secure Computing and Information Assurance (FCSCIA)) for the promotion of cybersecurity education, research and outreach. Since its inception in 2004, the cybersecurity certificate program has expanded to a cybersecurity minor for non-CIS majors, and cybersecurity certificates for CIS majors (CS, IT and IS). The CIS Department has amassed a solid record of research by undergraduate and graduate students. CIS faculty have successfully collaborated on CyberFlorida seed-funding grants with FSU, UWF and UNF.

Concerns for cybersecurity pervade public, commercial, and private life. This program can enhance the educational experiences of students at the university. The need for cybersecurity literacy is substantial and growing. Each program at the university has unique manifestations of cyber threats, impact and mitigation strategies. For these reasons, it is expected that the proposed program will start by offering general cybersecurity literacy courses, followed by courses designed to address cybersecurity issues unique to a discipline.

Recognizing that as technology advances and the world becomes increasingly information-driven, the demand for cybersecurity professionals continues to increase and the tasks of cybersecurity become progressively more challenging. In response to this national need, the University established the Florida A&M University Center for Cybersecurity (FCCS), which is housed in the Department of Computer and Information Sciences (CIS). FCCS promotes, coordinates, and implements education, research and innovation in cybersecurity. The core objectives and purpose of FCCS include:

- Ensure that the cybersecurity curriculum aligns with standards defined by the NSA/DHS National Centers of Academic Excellence in Cyber Defense (CAE-CD) program
- Increase minority participation in cybersecurity related careers.
- Support university initiatives and projects in cybersecurity.
- Maintain a program of research in cybersecurity.
- Serve as a community, regional and national resource for educational institutions, small businesses, and the general population.

The CIS Department offers both a certificate in cybersecurity for CIS majors, and a minor in cybersecurity for non-majors.

C. Provide a narrative of the planning process leading up to submission of this proposal. Include a chronology in table format of the activities, listing both university personnel directly involved and external individuals who participated.
in planning. Provide a timetable of events necessary for the implementation of the proposed program.

### Planning Process

<table>
<thead>
<tr>
<th>Date</th>
<th>Participants</th>
<th>Planning Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-2017</td>
<td>CST Dean’s Office and CIS Faculty</td>
<td>List of future degree programs Degree program included in the approved 2017-2022 strategic plan</td>
</tr>
<tr>
<td>Fall 2018</td>
<td>CIS Chairperson, CST Dean’s Office</td>
<td>Development of Pre-proposal</td>
</tr>
<tr>
<td>November 29, 2018</td>
<td>Dr. Sundra Kincey</td>
<td>Pre-proposal approved by CAVP review group with no concerns</td>
</tr>
<tr>
<td>Fall 2018 – Spring 2019</td>
<td>Dr. Edward Jones and CST Dean’s Office</td>
<td>Development of feasibility study</td>
</tr>
<tr>
<td>March 13, 2019</td>
<td>University Program Authorization Committee (UPARC)</td>
<td>Feasibility Study approved</td>
</tr>
<tr>
<td>Spring 2019</td>
<td>Dr. Edward Jones, Dr. Hongmei Chi, Mr. Jon deGoicoechea, Dr. Deidre W. Evans, and Dr. Sundra Kincey</td>
<td>Development of New Degree Proposal</td>
</tr>
<tr>
<td>Spring 2019</td>
<td>University Committees</td>
<td>University Committee Approval</td>
</tr>
<tr>
<td>Summer 2020</td>
<td>Program Faculty</td>
<td>Curriculum Development of new courses</td>
</tr>
</tbody>
</table>

### Events Leading to Implementation

<table>
<thead>
<tr>
<th>Date</th>
<th>Implementation Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2017</td>
<td>Launch minor and certificate programs in cybersecurity</td>
</tr>
<tr>
<td>March 2020</td>
<td>Florida A&amp;M University Board of Trustees</td>
</tr>
<tr>
<td>Summer 2020</td>
<td>Submission to Board of Governors Staff</td>
</tr>
<tr>
<td>August 2020</td>
<td>Full implementation of program</td>
</tr>
</tbody>
</table>

### VII. Program Quality Indicators - Reviews and Accreditation

Identify program reviews, accreditation visits, or internal reviews for any university degree programs related to the proposed program, especially any within the same academic unit. List all recommendations and summarize the institution's progress in implementing the recommendations.

The Computer Science program had an ABET accreditation site visit in the fall of 2019. Because ABET accreditation will be sought for the proposed program, the program will be aligned with published ABET criteria.

### VIII. Curriculum
A. Describe the specific expected student learning outcomes associated with the proposed program. If a bachelor’s degree program, include a web link to the Academic Learning Compact or include the document itself as an appendix.

The learning outcomes align with the ABET Computing Sciences Accrediting Board (CSAB) student outcomes:

1. Analyze a complex computing problem and apply principles of computing and other relevant disciplines to identify solutions.
2. Design, implement, and evaluate a computing-based solution to meet a given set of computing requirements in the context of the program’s discipline.
3. Communicate effectively in a variety of professional contexts.
4. Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
5. Function effectively as a member or leader of a team engaged in activities appropriate to the program’s discipline.
6. Apply security principles and practices to maintain operations in the presence of risks and threats to humans.

B. Describe the admission standards and graduation requirements for the program.

The proposed B.S. Cybersecurity degree will follow the general admission criteria for all undergraduate students as shown below.

ADMISSIONS POLICY - Academic Core Units

To be admitted to an undergraduate degree program as a regular freshmen you must be a graduate from an approved or regional accredited high school, submit official high school transcript, submit official post-secondary transcript; if applicable, official scores from the ACT or the College Board (SAT), two letters of recommendation from teachers and/or counselors, 500 word essay (The essay is part of the application.), and satisfy the below requirements (effective 2018):

- English: 4 units
  Includes substantial writing.

- Mathematics: 4 units
  Preferably: Algebra 1 and above, Geometry, Pre-Calculus or other advanced math.

- Natural Science: 3 units
  Preferably: Biology, Chemistry, and Physics, with two in a laboratory science.

- Social Science: 3 units

- World Language (must be sequential): 2 units
  Preferably: Spanish 1 and 2, French 1 and 2, and Latin 1 and 2 or other languages.
Electives: 2 units
Preferably: English, Mathematics, Natural Science, Social Science, or a Foreign Language core course.

International Baccalaureate (IB), Advanced Placement (AP), Advanced International Certification of Education (AICE), and Dual Enrollment are assigned an additional weight of 1. Pre-International Baccalaureate (IB), Pre-Advanced Placement (AP), Pre-Advanced International Certification of Education (AICE), and Honors are assigned an additional weight of .5.

Fall Admissions Criteria

3.00 Recalculated (FAMU Admissions) Core Academic Grade-Point Average on 4.00 Scale

Test Scores

<table>
<thead>
<tr>
<th>Examination</th>
<th>SMATH</th>
<th>SREAD</th>
<th>SWLAN</th>
<th>English Math Reading</th>
<th>School Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redesigned SAT</td>
<td>26</td>
<td>27</td>
<td>27</td>
<td></td>
<td>5215</td>
</tr>
<tr>
<td>ACT</td>
<td>19</td>
<td>22</td>
<td>22</td>
<td></td>
<td>0726</td>
</tr>
</tbody>
</table>

FAMU Admissions does not have a preference for one exam over the other. We encourage you to take whichever exam suits you best. If you choose to take both exams, we will consider whichever score is most competitive for admission.

If you not admitted, another pathway to FAMU is through our [IGNITE Transfer Program](#) established at several Florida colleges in the Florida College System. Admissions to FAMU is granted upon completing a minimum of 60 college transferable semester credits with an overall 2.00 GPA.

Admissions Decisions

All offers of admission are tentative if you have high school or collegiate coursework in progress. Final admission is dependent on receipt and review of your final transcripts. Admission offers are subject to cancellation if your final coursework does not meet admission requirements. Earning a Certificate of Completion rather than a high school diploma will result in admission being revoked.

Graduates from the B.S. Cybersecurity are required to pass each course in the curriculum (Section C) with a grade of “C” or higher.

C. Describe the curricular framework for the proposed program, including number of credit hours and composition of required core courses, restricted electives, unrestricted electives, thesis requirements, and dissertation requirements. Identify the total numbers of semester credit hours for the degree.

The program requires the following:
120 credit hours total
61 required hours in the major
38 General Education
12 Free (mon-major electives)
9 Approved electives
120 credit hours total

D. Provide a sequenced course of study for all majors, concentrations, or areas of emphasis within the proposed program.

**Freshman Year**

ENC 1101 COMMUNICATIVE SKILLS I
MAC 1147 PRECALCULUS (SP: MACXXX pre-calculus course)
SLS 1101 FIRST-YEAR EXPERIENCE
BSC 1005C OR Natural Science Gen Ed with Lab
AMH 2091 AFRO-AMERICAN HISTORY 16

ENC 1102 COMMUNICATIVE SKILLS II
STA 2023 (SP: STAX023 or SATX122)
PSY 2012 (SP: PSYXXXX psychology course)
CNT 2000 (SP: network fundamentals course)
HUMANITIES GEN ED 15

**Sophomore Year**

COP3104C (SP: COPXXXX programming course)
COT 2104 MATHEMATICS FOR COMPUTING
ECO 2013 (SP: ECOX013)
PSC 1121C OR NATURAL SCIENCE GEN ED WITH LAB 14

COP 3366 OR COP 3330 OR ANOTHER OO PROGRAMMING LANGUAGE (SP: COP 3710 DATABASE
CIS 4360 INTRODUCTION TO COMPUTER SECURITY
ENC 3243 TECHNICAL WRITING (recommended or Cyber elective)
FREE ELECTIVE 15

**Junior Year**

CIS 4250 COMPUTER ETHICS AND PROFESSIONAL RESPONSIBILITY
CNT 4603 SYSTEM ADMINISTRATION
CIS 4385C DIGITAL FORENSICS
XXX XXXX SECURE SOFTWARE DEVELOPMENT
HUMANITIES GEN ED 15

CNT 4504 DATA COMMUNICATION & ORGANIZATIONAL NETWORKS
CIS 4361 APPLIED SECURITY
XXX XXXX CYBERLAWS AND LEGAL ASPECTS OF IT
CIS 4920 PROFESSIONAL DEVELOPMENT IV
FREE ELECTIVE 15

**Senior Year**

XXX XXXX DATABASE SECURITY
CNT 4406 NETWORK SECURITY
XXX XXXX INFORMATION SECURITY AND RISK MANAGEMENT
XXX XXXX CYBER ELECTIVE
FREE ELECTIVE 15

XXX XXXX CYBER CAPSTONE
XXX XXXX CYBER WAR GAMES
XXX XXXX ETHICAL HACKING AND PENETRATION TESTING
XXX XXXX CYBER ELECTIVE
FREE ELECTIVE 15

Cyber (Major) Electives

CRYPTOGRAPHY
MOBILE FORENSICS
IT RISK MANAGEMENT
CYBERSECURITY IN BUSINESS AND INDUSTRY
OPERATING SYSTEMS SECURITY
SOCIAL MEDIA AND SECURITY ANALYSIS
IOT FORENSICS
ADVANCED SECURITY PRACTITIONER

Initially, no focus areas are defined. Instead, each student will select from an approved list of electives.

E. Provide a one- or two-sentence description of each required or elective course.

ENC 3243 TECHNICAL WRITING
Credit Hours: 3
Course Description: Emphasis is on clear expository writing of memoranda, reports, and articles in student’s particular field.

CNT 2000 COMPUTER SYSTEMS AND NETWORK
Credit Hours: 3
Course Description: this course covers the fundamentals of hardware and software and how they integrate to form essential components of its systems. this course prepares students for fundamental skills in server, network and hardware installation, troubleshooting and maintenance

COP 3014C FUNDAMENTALS OF PROGRAMMING (MAC 1105)
Credit Hours: 4
Course Description: An introductory course in programming using a high-level programming language. The primary objective of this course is to teach the students problem solving and design using object-oriented program development. It introduces all aspects of the programming and the problem-solving processes including problem analysis and organization, algorithms development, coding, debugging, testing, documentation and maintenance. It also emphasizes on good programming practices, as well as ethical and social issues such as privacy and computer usage.

COP 3330 INTRO TO OBJECT-ORIENTED PROGRAMMING (COP 3014C)
Credit Hours: 3
Course Description: This is a programming course that also introduces the object-oriented programming paradigm. Object oriented programming is the most important and dominant programming approach today. Object oriented programming is quite different than functional or procedural programming, and it is difficult to learn on your own. This course will focus on teaching structured and object-oriented programming techniques, and proper object-oriented program design. Students will design, write, compile, execute and debug C++ object-oriented programs throughout the course. Hands-on programming will be a key part of the course.

**COP 3366 C# PROGRAMMING (COP 3014C)**
Credit Hours: 4
Course Description: An introduction to programming in the C# programming language, in the Microsoft dot net environment. Students will learn to write programs in the C# language Microsoft Visual Studio development environment. Emphasis will be on creating programs that use a graphic user interface. Hands-on programming projects will be an integral part of the course.

**COP 3710 DATABASE MANAGEMENT SYSTEM (COP3014C)**
Credit Hours: 3
Course Description: Introduction to database systems and database management system architectures. Relational model and relational database design. Case applications using fourth-generation languages.

**COT 2104 MATHEMATICS FOR COMPUTING (MAC 1105)**
Credit Hours: 3
Course Description: This course builds basic mathematical logic skills and foundations of discrete mathematics. It is designed for students in the AA pre-major in its degree. Topics include statements; truth tables and tautologies; arguments; rules of demonstrations; conditional demonstrations and indirect proof; logic of quantifiers; algebra of sets; definitions and axioms of set theory; informal proof; relations and functions; mathematical induction; strings and other topics in discrete mathematics.

**CIS 4920 PROFESSIONAL DEVELOPMENT**
Credit Hours: 3
Course Description: This course is designed to help students develop the career competencies and strategies that will prepare them to enter the job market as entry level professionals. Structured activities and workshops designed to prepare juniors and seniors for the professional life during internship or initial career placement.

**CIS 4250 COMPUTER ETHICS AND PROFESSIONAL RESPONSIBILITY**
This course is dedicated to exploring the social, political, philosophical, constitutional, legal, and economic issues related to computers. In addition to the ethical issues related to computing, those that apply to all aspects of life - honesty, responsibility, fairness, are discussed. The special issues that spring from these topics will explored - "applied ethics" and the common codes and professional practices of the CS and IT fields.

**CIS 3363 IT SYSTEMS SECURITY (CNT 2000/instructor consent)**
Credit Hours: 3
Course Description: Overview of technical aspects of data security with emphasis on Internet attacks and defenses. Design of secure systems.

**CIS 4360 INTRO TO COMPUTER SECURITY**
Credit Hours: 3
Course Description: This course will introduce the student to issues of security vulnerability and protection. The material will relate to current issues that affect day to day computing.

**CIS 4361 APPLIED SECURITY**
Credit Hours: 3
Course Description: in this course, the main issues and main threats in computer security are introduced. privacy and integrity of data together with the availability of computer resources need to be guaranteed. the following topics are covered; physical security, communication security, information flow control, database security, operating systems security and computer viruses.

**CNT 4504 NETWORK SECURITY**
Credit Hours: 3
Course Description: Communication systems components, networks, LANs, common carrier services, network architectures, distributed information systems.

**CNT 4603 COMPUTER SYSTEMS ADMINISTRATION**
Credit Hours: 3
Course Description: This course offers a practical grounding in the principles of system administration and highlights why departments do the things they do, such as imposing limitations on users. Various major operating system families will be used to demonstrate the universal principles that apply to all platforms. other issues such as user account management, interoperability, capacity planning, load balancing, security, and disaster preparedness will be discussed. through hands-on assignments, students deal with challenges designed to help them create, customize, and grow their own toolbox.

**CNT 4406 NETWORK SECURITY (CIS 4360)**
Credit Hours: 3
Course Description: this course will address issues of network security from authentication to non-repudiation. it will address the fundamental theories of network security including public and private key cryptographic techniques. other topics include network defenses such as firewalls and intrusion detection systems, as well as public key infrastructures and other security enabling technologies.

**CIS 3615 SECURE SOFTWARE DEVELOPMENT (COP 3014C) * **
Credit Hours: 3
Course Description: presents perspectives and techniques to help ensure the security of essential software. it emphasizes methodologies and principles that reduce security risk early in the development life cycle. implementation-level issues are discussed and applied through code samples. secure software risk assessment, design, coding and testing are covered.

**CAP 4315 SOCIAL MEDIA AND SECURITY ANALYSIS (COP 3710) * **
Credit Hours: 3
Course Description: techniques developed by the computer science research community for analyzing social networks and social media datasets.

**CIS 4512 INFORMATION SECURITY AND RISK MANAGEMENT (COP 3828) * **
Credit Hours: 3
Course Description: introduces the student to oral and written communication skills required for effective system development. course content includes exercises to aid in the understanding and documenting of user requirements, peer review sessions to better understand collaborative work sessions, and case tolls and computer supported cooperative work (CSCW) software to
develop skills in group-oriented project activities and report writing.

**CIS 4596 CYBERSECURITY CAPSTONE (CIS 4512)**  
Credit Hours: 3  
Course Description: this course is designed for students to demonstrate their knowledge and skills applicable to the area of cyber security and its core competencies. The course is designed as a project-based experience to develop a portfolio quality product. The student's project requirements will be designed with instructor input to demonstrate curriculum expertise.

**CNT 4188 IOT FORENSICS**  
Credit Hours: 3  
Course Description: this course examines the existing digital forensics models and methodologies for their applicability within the IoT domain. Various tools and techniques will provide access within these devices.

**CIS 4385C DIGITAL FORENSICS**  
Credit Hours: 3  
Course Description: technical issues in acquiring computer evidence and popular file systems are examined. Reporting issues in the legal system, digital evidence collection and evaluation, and legal issues involved in network forensics.

**CIS 4206 MOBILE FORENSICS**  
Credit Hours: 3  
Course Description: this course will introduce experienced digital forensics students to legal and practical issues regarding electronic discovery, including legal requirements, technical solutions and practical aspects.

**CIS 4511 IT RISK MANAGEMENT**  
Credit Hours: 3  
Course Description: various aspects of risk management throughout the life of a project. The course will also present various quantitative/qualitative risk assessment models.

**CIS 4781 CYBERSECURITY IN BUSINESS & INDUSTRY**  
Credit Hours: 3  
Course Description: this course emphasizing the application and integration of cybersecurity principles, frameworks, standards, and best practices to the management, governance, and policy development processes for businesses. The course focuses on organization, management, and governance of cybersecurity for enterprise IT in business settings, risk management practices, and development and implementation of industry-wide cybersecurity initiatives and programs.

**CIS 3367 OPERATING SYSTEMS SECURITY**  
Credit Hours: 3  
Course Description: this course examines tools and techniques for securing Windows and Linux operating systems. Students will acquire knowledge and skills to perform audit assessments and implement enterprise-wide operating system security.

**CIS 4362 INTRODUCTION TO CRYPTOLOGY**  
Credit Hours: 3  
Course Description: Classical cryptography, entropy, stream and block ciphers. Public-key versus symmetric cryptography, one-way and trap-door functions. Primarily and factorization, DLP, Diffie-Hellman, RSA and ElGamal cryptosystems. Issues of computer and network
CIS 4201 CYBERLAWS AND LEGAL ASPECTS OF IT*
Credit Hours: 3
Course Description: the course provides an overview of rights, responsibilities, and liabilities associated with systems today. statutes, case histories, regulations, etc. will be discussed, to understand and control risk. research topics will be assigned to students.

CIS 4357 ADVANCED SECURITY PRACTIONER
Credit Hours: 3
Course Description: threats to computer networks, network vulnerabilities, techniques for strengthening passive defenses, tools for establishing an active network defense, and policies for enhancing forensic analysis of crimes and attacks on computer networks.

CIS 4368 INTRO TO DATABASE SECURITY
Credit Hours: 3
Course Description: an in-depth look at database security concepts and auditing techniques. hands-on approach when examining security techniques. examines different security strategies and advancements in implementation as well as problem solving.

CIS 4204 ETHICAL HACKING AND PENETRATION TESTING
Credit Hours: 3
Course Description: technical issues in acquiring computer evidence and popular file systems are examined. reporting issues in the legal system, digital evidence collection and evaluation, and legal issues involved in network forensics

CNT 4416 CYBER WAR GAMING
Credit Hours: 3
Course Description: every organization, whether part of the government or the private sector, needs battle-tested personnel in order to defend its networks against attack. the most effective way to provide this experience is to recreate the exact scenarios, no matter how nefarious, they will see in the real world. this course provides exercises that use different specialties (network, security, visualization, software, etc.) into color-coded red and blue teams that perform specific roles in attacking and defending it infrastructures.

F. For degree programs in the science and technology disciplines, discuss how industry-driven competencies were identified and incorporated into the curriculum and indicate whether any industry advisory council exists to provide input for curriculum development and student assessment.

The proposed Cybersecurity curriculum follows the recommendations of two professional organizations, the ACM Cybersecurity Curricula 2017 Guideline and with the ABET criteria for accrediting Cybersecurity programs. These organizations also prescribe guidelines and approaches for student and program assessment. Additional requirements for cybersecurity education are defined by the NIST National Initiative for Cybersecurity Education (NICE) framework. These organizations also prescribe guidelines and approaches for student and program assessment.

G. For all programs, list the specialized accreditation agencies and learned societies that would be concerned with the proposed program. Will the university seek accreditation for the program if it is available? If not, why? Provide a brief timeline for seeking accreditation, if appropriate.
The proposed program is designed to satisfy ABET accreditation criteria applicable to Cybersecurity. Florida A&M University has been designated a National Center of Academic Excellence in Cyber Defense Education (CAE-CD) by DHS and NSA. Designation requires meeting additional strict standards that include required academic. ABET accreditation will be sought within the first five years of the program, at which point there will be graduates from the program. The CAE-CD re-designation review will occur during 2022.

H. For doctoral programs, list the accreditation agencies and learned societies that would be concerned with corresponding bachelor’s or master’s programs associated with the proposed program. Are the programs accredited? If not, why?

This section is not applicable.

I. Briefly describe the anticipated delivery system for the proposed program (e.g., traditional delivery on main campus; traditional delivery at branch campuses or centers; or nontraditional delivery such as distance or distributed learning, self-paced instruction, or external degree programs). If the proposed delivery system will require specialized services or greater than normal financial support, include projected costs in Table 2 in Appendix A. Provide a narrative describing the feasibility of delivering the proposed program through collaboration with other universities, both public and private. Cite specific queries made of other institutions with respect to shared courses, distance/distributed learning technologies, and joint-use facilities for research or internships.

The proposed BSCys program will be offered online and face-to-face. Initially, the majority of the delivery system will be the traditional in-person mode.

IX. Faculty Participation

A. Use Table 4 in Appendix A to identify existing and anticipated full-time (not visiting or adjunct) faculty who will participate in the proposed program through Year 5. Include (a) faculty code associated with the source of funding for the position; (b) name; (c) highest degree held; (d) academic discipline or specialization; (e) contract status (tenure, tenure-earning, or multi-year annual [MYA]); (f) contract length in months; and (g) percent of annual effort that will be directed toward the proposed program (instruction, advising, supervising internships and practica, and supervising thesis or dissertation hours).

Table 4 identifies faculty who are credentialed to teach in the proposed program.

B. Use Table 2 in Appendix A to display the costs and associated funding resources for existing and anticipated full-time faculty (as identified in Table 4 in Appendix A). Costs for visiting and adjunct faculty should be included in the category of Other Personnel Services (OPS). Provide a narrative summarizing projected costs and funding sources.

Table 2 identifies projected costs of the program. In year one, most of the monies allocated to the program are from existing dollars from salaries of current faculty as identified in Table 4. Year One costs also include monies for administrative support, general operating expenses, graduate assistantships, and a percentage of new faculty salaries. By year five, the majority of
funds will be allocated from a continuing E&G base of monies dedicated to faculty, staff, operating expenses and equipment.

C. Provide in the appendices the abbreviated curriculum vitae (CV) for each existing faculty member (do not include information for visiting or adjunct faculty).

See curriculum vitae in Appendix C.

D. Provide evidence that the academic unit(s) associated with this new degree have been productive in teaching, research, and service. Such evidence may include trends over time for average course load, FTE productivity, student HC in major or service courses, degrees granted, external funding attracted, as well as qualitative indicators of excellence.

The table below summarizes the faculty productivity for 2017-18. Faculty members are engaged in teaching, research, service and grant acquisition. A primary indicator of excellence is the University designation as a National Center of Academic Excellence in Cyber Defense Education. Additional data related to faculty productivity are shown in the curriculum vitae in Appendix C.

X. Non-Faculty Resources

A. Describe library resources currently available to implement and/or sustain the proposed program through Year 5. Provide the total number of volumes and serials available in this discipline and related fields. List major journals that are available to the university’s students. Include a signed statement from the Library.

The libraries at both FAMU and FSU are well-equipped with primary literature in the areas of engineering, basic science, mathematics, and liberal studies, and provide excellent support for our undergraduates. Annual purchases of books, based on recommendations of the faculty and the college library committee, ensure that the collections are maintained up to date. The Samuel H. Coleman Memorial Library at FAMU holds over 500,000 catalogued volumes, almost 6,000 serial subscriptions, 131,500 microfilms, and 73,000 non-print items. Furthermore, the library serves as a depository for extensive United States government publications. All topics related to engineering are housed at this library. Students also have access to many online journals.

The Library’s systems for locating and obtaining electronic information:

Access to licensed electronic resources is available to faculty, staff and students of Florida A&M University from the Libraries’ homepage. Users may access full text electronic resources from home or remote locations with the use of the fourteen (14) digit activated library card number, located on the bottom of the Rattler Card, Florida A&M’s ID card. The web-based and mobile version of the Online Catalog for the State University Libraries (SUL) of Florida is used to locate books, journals, newspapers, government publications, microform, and other resources. The catalog may be access at http://famu.catalog.fcla.edu.

The Library also provides access to ARTstor. This database contains 1.3+ million images in the arts, architecture, humanities, and sciences; 200+ collections from Asia Society, MoMA, Musee du Louvre; and multidisciplinary teaching ideas.

*Computer Science Digital Content:*

Other services relevant to the needs of the program:

Ask a Librarian:

This chat/email/text service is provided primarily for the faculty, staff and students of Florida A&M University. The electronic reference service is designed to provide answers to the same types of questions you might ask at the reference desk.

Distance Learning Library:

The University Libraries are active partners and participants in the Florida Distance Learning Library Initiative (DLLI), the Florida Center for Library Automation (FCLA), and in SUS library initiatives and joint agreements. These partnerships support research in Computer Science. The DLLI initiative ensures document delivery of resources between libraries in the state. The Reference and Referral Center, part of DLLI, is also available as a supplement to FAMU services to distance learners who are in need of assistance in locating resources. Through partnerships with the SUS and community college libraries, access to and reciprocal borrowing privileges are available to all SUS students. Many purchases of electronic databases, including those with full text, are made through SUS and FCLA licensing agreements. These databases are available to students through the online catalog, WebLUIIS.

B. Describe additional library resources that are needed to implement and/or sustain the program through Year 5. Include projected costs of additional library resources in Table 2 in Appendix A. Please include the signature of the Library Director in Appendix B.

No additional library resources are needed to implement or sustain the proposed BS-Cybersecurity program.

C. Describe classroom, teaching laboratory, research laboratory, office, and other types of space that are necessary and currently available to implement the proposed program through Year 5.

Table E summarizes the existing facilities that are adequate during initial stages of this program. The CIS Department is assigned four classrooms, capable of supporting up to 72 classes per week; two classrooms can be reconfigured into labs.

Table E. Space and Facilities to Support Proposed Cybersecurity Program
### Offices:

All regular faculty members (tenured, tenure track, instructor) have their own office for all job-related activities, such as conducting research, mentoring, and advising. Adjunct faculty may share offices if an office is available. Moreover, each faculty office is equipped with a PC (Personal Computer) with an Ethernet connection to the local Windows/UNIX LAN and Internet. Each faculty office is also equipped with a laser printer and a telephone. All faculty and staff are also assigned a notebook computer and/or a PC for use at home or on travel.

Administrative offices are configured identically to the faculty offices. Each staff member has a dedicated office space with Windows desktop, a laser printer and a telephone. All staff and faculty have access to two multi-function networked copiers/scanners/printers, and a color laser printer. All faculty, staff and graduate students also have access to the CIS Department conference room. The conference room contains a HP PC, Wall mounted 42” LCD display connected to either the PC or a notebook computer, and a Polycom 6000 video teleconferencing system.

### Classrooms:

The CIS Department has four traditional classrooms used for instruction with a combined seating capacity for 140 students. These rooms can support up to 32 MWF and 24 TTh classes in a typical week. Although these classrooms are used primarily by the CIS Department, other departments use them when available. Total classroom utilization is above 70%. Each classroom contains a smart classroom podium with overhead projector and internet connectivity. In addition, there is the capability to connect the instructor’s own laptop to the LCD projector. Two of the classrooms can also be used as teaching labs.

### Laboratory Facilities:

There are five dedicated computer laboratories within the CIS Department. The Security Lab is an isolated environment for cybersecurity instruction and research. The Graduate Lab supports research efforts of faculty members and graduate students. A third lab, partitioned into an open space and six locked cubicles, supports small student teams working on research or assigned projects.

The Teaching Lab and the Open Lab serve both as schedulable computer classroom environment for hands on instruction, and as open working space where students can complete classwork. All lab workstations access the departmental network resources and services on both Windows Server and the Sun Solaris (UNIX) based servers. The Teaching Lab is configured as a smart classroom with podium, audiovisual projection, and air media connectivity. The Open Lab consists of two wall mounted 55” LCD displays managed from the

<table>
<thead>
<tr>
<th>Utilization</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classrooms</td>
<td>4</td>
</tr>
<tr>
<td>Teaching Labs</td>
<td>2</td>
</tr>
<tr>
<td>Research Labs</td>
<td>2</td>
</tr>
<tr>
<td>Faculty Offices</td>
<td>13</td>
</tr>
<tr>
<td>Student Offices/Areas</td>
<td>2</td>
</tr>
<tr>
<td>Storage Areas</td>
<td>2</td>
</tr>
</tbody>
</table>
instructor podium. The Teaching and Open labs are open Monday through Thursday 8:00am – 8:00pm, and Friday 8:00am- 5:00 pm.

D. Describe additional classroom, teaching laboratory, research laboratory, office, and other space needed to implement and/or maintain the proposed program through Year 5. Include any projected Instruction and Research (I&R) costs of additional space in Table 2 in Appendix A. Do not include costs for new construction because that information should be provided in response to X (E) below.

NA

E. If a new capital expenditure for instructional or research space is required, indicate where this item appears on the university's fixed capital outlay priority list. Table 2 in Appendix A includes only Instruction and Research (I&R) costs. If non-I&R costs, such as indirect costs affecting libraries and student services, are expected to increase as a result of the program, describe and estimate those expenses in narrative form below. It is expected that high enrollment programs in particular would necessitate increased costs in non-I&R activities.

No new capital expenditure is required to obtain research space.

F. Describe specialized equipment that is currently available to implement the proposed program through Year 5. Focus primarily on instructional and research requirements.

NA

G. Describe additional specialized equipment that will be needed to implement and/or sustain the proposed program through Year 5. Include projected costs of additional equipment in Table 2 in Appendix A.

NA

H. Describe any additional special categories of resources needed to implement the program through Year 5 (access to proprietary research facilities, specialized services, extended travel, etc.). Include projected costs of special resources in Table 2 in Appendix A.

NA

I. Describe fellowships, scholarships, and graduate assistantships to be allocated to the proposed program through Year 5. Include the projected costs in Table 2 in Appendix A.

One graduate assistantship with tuition waiver ($30,000 annually) will be requested to provide instructional support for hands-on laboratory configuration, supervision, analysis and archival.

J. Describe currently available sites for internship and practicum experiences, if appropriate to the program. Describe plans to seek additional sites in Years 1
through 5.

There is no required internship or practicum experience.
## APPENDIX A

### Table 1-A: Projected Headcount from Potential Sources

<table>
<thead>
<tr>
<th>Source of Students (Non-duplicated headcount in any given year)*</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper-level students who are transferring from other majors within the university**</td>
<td>2</td>
<td>1.5</td>
<td>5</td>
<td>3.75</td>
<td>7</td>
</tr>
<tr>
<td>Students who initially entered the university as FTIC students and who are progressing from the lower to the upper level***</td>
<td>6</td>
<td>4.5</td>
<td>13</td>
<td>9.75</td>
<td>18</td>
</tr>
<tr>
<td>Florida College System transfers to the upper level**</td>
<td>4</td>
<td>3</td>
<td>4</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>Transfers to the upper level from other Florida colleges and universities***</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1.5</td>
<td>2</td>
</tr>
<tr>
<td>Transfers from out of state colleges and universities***</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other (Explain)***</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Totals</td>
<td>12</td>
<td>9</td>
<td>24</td>
<td>18</td>
<td>32</td>
</tr>
</tbody>
</table>

* List projected annual headcount of students enrolled in the degree program. List projected yearly cumulative ENROLLMENTS instead of admissions.
** If numbers appear in this category, they should go DOWN in later years.
*** Do not include individuals counted in any PRIOR CATEGORY in a given COLUMN.

## APPENDIX A

### Table 2: Projected Costs and Funding Sources

<table>
<thead>
<tr>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>$148,115</td>
<td>$177,000</td>
<td>$177,000</td>
<td>$177,000</td>
<td>$177,000</td>
</tr>
</tbody>
</table>

**Identify new costs/indications in Table 3.
***Include recurring E&G expenditures (facilities/maintenance, enrollment growth, and new costs) from Years 1-4 that continue into Year 5.
****Identify non-recurring costs.

### Faculty and Staff Summary

<table>
<thead>
<tr>
<th>Year</th>
<th>Year 1</th>
<th>Year 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Full-time (hours/year)</td>
<td>1,950</td>
<td>2,388</td>
</tr>
<tr>
<td>Full-time (FTE)</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Part-time (FTE)</td>
<td>0.0</td>
<td>0.0</td>
</tr>
</tbody>
</table>
Table 3: Anticipated Reallocation of Education and General Funds

<table>
<thead>
<tr>
<th>Program and/or E&amp;G account from which current funds will be reallocated during Year 1</th>
<th>Base before reallocation</th>
<th>Amount to be reallocated</th>
<th>Base after reallocation</th>
</tr>
</thead>
<tbody>
<tr>
<td>College of Science and Technology</td>
<td></td>
<td>196,166</td>
<td></td>
</tr>
</tbody>
</table>

| Totals | $0 | $196,166 | $0 |

APPENDIX A

TABLE 3
ANTICIPATED REALLOCATION OF EDUCATION & GENERAL FUNDS*

*This table represents the anticipated reallocation of education and general funds for various programs and/or E&G accounts during Year 1. The specific amounts and allocations are indicated in the table.
Table 4: Anticipated Faculty Participation

<table>
<thead>
<tr>
<th>Faculty Code</th>
<th>Faculty Name or &quot;New Hire&quot;</th>
<th>Highest Degree Held</th>
<th>Academic Discipline or Specialty</th>
<th>Rank</th>
<th>Contract Status</th>
<th>Initial Date for Participation in Program</th>
<th>Mos. Contract Year 1</th>
<th>FTE Year 1</th>
<th>% Effort for Prg. Year 1</th>
<th>PY Year 1</th>
<th>Mos. Contract Year 5</th>
<th>FTE Year 5</th>
<th>% Effort for Prg. Year 5</th>
<th>PY Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Hongmei Chi, Ph.D.</td>
<td>Computer Science</td>
<td></td>
<td>Professor</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.30</td>
<td>0.23</td>
<td>9</td>
<td>0.75</td>
<td>0.30</td>
<td>0.23</td>
</tr>
<tr>
<td>A</td>
<td>Jon deGrootchek, M.S.</td>
<td>Information Technology</td>
<td></td>
<td>Instructor</td>
<td>MFA</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.40</td>
<td>0.30</td>
<td>9</td>
<td>0.75</td>
<td>0.40</td>
<td>0.30</td>
</tr>
<tr>
<td>A</td>
<td>Edwin Jacobs, M.S.</td>
<td>Computer Science</td>
<td></td>
<td>Instructor</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.20</td>
<td>0.15</td>
<td>9</td>
<td>0.75</td>
<td>0.20</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Bobby Granville, Ph.D.</td>
<td>Computer Science</td>
<td></td>
<td>Assoc. Prof.</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.10</td>
<td>0.08</td>
<td>9</td>
<td>0.75</td>
<td>0.10</td>
<td>0.08</td>
</tr>
<tr>
<td>A</td>
<td>Edward L. Jones, Ph.D.</td>
<td>Computer Science</td>
<td></td>
<td>Professor</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.20</td>
<td>0.15</td>
<td>9</td>
<td>0.75</td>
<td>0.20</td>
<td>0.15</td>
</tr>
<tr>
<td>A</td>
<td>Bhamu Prasad, Ph.D.</td>
<td>Computer Science</td>
<td></td>
<td>Professor</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.10</td>
<td>0.08</td>
<td>9</td>
<td>0.75</td>
<td>0.10</td>
<td>0.08</td>
</tr>
<tr>
<td>A</td>
<td>Vanessa Coote, M.S.</td>
<td>Computer Science</td>
<td></td>
<td>Instructor</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.20</td>
<td>0.15</td>
<td>9</td>
<td>0.75</td>
<td>0.20</td>
<td>0.15</td>
<td></td>
</tr>
<tr>
<td>A</td>
<td>Clement S. Allen, Ph.D.</td>
<td>Computer Science</td>
<td></td>
<td>Professor</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.20</td>
<td>0.15</td>
<td>9</td>
<td>0.75</td>
<td>0.20</td>
<td>0.15</td>
</tr>
<tr>
<td>A</td>
<td>Deidre Evans, Ph.D.</td>
<td>Electrical Engineering</td>
<td></td>
<td>Assoc. Prof.</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.20</td>
<td>0.15</td>
<td>9</td>
<td>0.75</td>
<td>0.20</td>
<td>0.15</td>
</tr>
<tr>
<td>B</td>
<td>New Hire 1</td>
<td>Computer Science</td>
<td></td>
<td>Asst. Prof.</td>
<td>Tenure</td>
<td>Fall 2020</td>
<td>9</td>
<td>0.75</td>
<td>0.40</td>
<td>0.30</td>
<td>9</td>
<td>0.75</td>
<td>0.40</td>
<td>0.30</td>
</tr>
<tr>
<td>B</td>
<td>New Hire 2</td>
<td>Computer Science</td>
<td></td>
<td>Asst. Prof.</td>
<td>Tenure</td>
<td>Fall 2020</td>
<td>9</td>
<td>0.75</td>
<td>0.30</td>
<td>0.23</td>
<td>9</td>
<td>0.75</td>
<td>0.30</td>
<td>0.23</td>
</tr>
<tr>
<td>B</td>
<td>New Hire 3</td>
<td>Computer Science</td>
<td></td>
<td>Asst. Prof.</td>
<td>Tenure</td>
<td>Fall 2025</td>
<td>9</td>
<td>0.00</td>
<td>0.00</td>
<td>0.00</td>
<td>9</td>
<td>0.75</td>
<td>0.40</td>
<td>0.30</td>
</tr>
</tbody>
</table>

Total Person-Years (PY): 2.60, 1.95, 9.00, 3.10, 2.35

<table>
<thead>
<tr>
<th>Faculty Code</th>
<th>Source of Funding</th>
<th>PY Workload by Budget Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Existing faculty on a regular line</td>
<td>Current Education &amp; General Revenue</td>
</tr>
<tr>
<td>B</td>
<td>New faculty to be hired on a vacant line</td>
<td>Current Education &amp; General Revenue</td>
</tr>
<tr>
<td>C</td>
<td>New faculty to be hired on a new line</td>
<td>New Education &amp; General Revenue</td>
</tr>
<tr>
<td>D</td>
<td>Existing faculty hired on contracts/grants</td>
<td>Contracts/Grants</td>
</tr>
<tr>
<td>E</td>
<td>New faculty to be hired on contracts/grants</td>
<td>Contracts/Grants</td>
</tr>
</tbody>
</table>

Overall Totals for Year 1: 1.95, Year 5: 2.35
APPENDIX B

Please include the signature of the Equal Opportunity Officer and the Library Director.

______________________________  
Signature of Equal Opportunity Officer  
February 17, 2020  
Date

______________________________  
Signature of Library Director  
February 17, 2020  
Date

This appendix was created to facilitate the collection of signatures in support of the proposal. Signatures in this section illustrate that the Equal Opportunity Officer has reviewed section II.E of the proposal and the Library Director has reviewed sections X.A and X.B.
APPENDIX C – FACULTY VITAE
CURRICULUM VITAE

1. Name: Clement Allen

2. Education:
   Ph.D., Computer and Information Sciences, University of Alabama-Birmingham, 1995
   M. S., Computer Science, Howard University, 1988

3. Academic experience:
   Department of Computer and Information Sciences, Florida A&M University (FAMU),
   Associate Professor (2000-present), fulltime
   Department of CIS, FAMU, Assistant Professor (1995-2000), fulltime

4. Non-academic experience:
   AT&T Bell Laboratories, Member of Technical Staff, (1987-1990)

5. Certifications or professional registrations: none

6. Current membership in professional organizations:
   Membership in Association for Computing Machinery (ACM)

7. Honors and awards:

   Title: Holistic Model for Minority Education and Research   Source: NSF/CO-PI
   Award Period Covered: 10/01/04 – 09/01/09   Amount: $138,000

   Title: Development of an Ambient Computing Laboratory   Source: NSF/PI
   Award Period Covered: 04/01/06 – 05/01/08   Amount: $1,000,000

   Title: Minority Innovation Challenges Institute   Source: NASA/PI
   Award Period Covered: 09/01/09 – 08/30/12   Amount: $1,200,000

   Title: Advancing Robotics Technology for Societal Impact   Source: NSF/CO-PI
   Award Period Covered: 09/01/10 – 08/31/12   Amount: $24,000

8. Service activities:

   CIS/FAMU Tenure and Promotion Committee, Chair (2005—present)
   College of Arts and Sciences/FAMU Tenure and Promotion Committee, Member
   (2005—2011)
   College of Arts and Sciences/FAMU Grievance Committee, Member (2005—2011)

9. Most important publications and presentations from the past five years:

   Williams, A., Touretzky, D., Thompson-Tira, E., Manning, L., Boonthum, C., Allen, C.,
   Introducing an Experimental Cognitive Robotics Curriculum at Historically Black

10. Most recent professional development activities:
Curriculum Vitae

1. Name: Hongmei Chi

2. Education:
   Ph.D., Computer and Information Science, Florida State University, 2004
   M. S., Computer Science, Dalian University of Technology, 1992

3. Academic experience:
   Department of Computer and Information Sciences (CIS), Florida A&M University
   (FAMU), Associate Professor (2012-tilldate), fulltime
   Department of CIS, FAMU, Assistant Professor (2006-2012), fulltime
   Department of CIS, FAMU, Visiting Assistant Professor (2004-2006), fulltime

4. Non-academic experience:
   Florida State University, (2001-2004), Teaching assistant, part-time
   Developer for SPNRG (http://sprng.cs.fsu.edu) and
   MIGRATE http://popgen.sc.fsu.edu/Migrate/Migrate-n.html (2001--2006), part-time

5. Certifications or professional registrations:

6. Current membership in professional organizations:
   Membership in the American Statistical Association (ASA)
   Membership in Association for Computing Machinery (ACM)

7. Honors and awards:
   Invited speaker, NSF SFS Workshop at FIU, July 5-11, 2012, Miami, FL
   
   Title: Comprehensive Preparation for Future Nuclear Scientists and Engineers
   Award Period Covered: 09/28/12 – 9/27/16       Source: NRC/Co-PI
   Amount: $400,000

   Title: Efficient Numerical Methods for SPDE
   Award Period Covered: 07/01/12 – 6/30/15       Source: AFOSR/PI
   Amount: $300,000

   Title: Computation for STEM Education
   Award Period Covered: 09/01/09 – 9/30/13       Source: Department of Education/PI
   Amount: $600,000

8. Service activities:
   CIS/FAMU Computer Science Coordinator (2011—present)
   CIS/FAMU Information Technology Coordinator (2008—2011)
   University Curriculum Committee members (2009—2012)

9. Most important publications and presentations from the past five years:

   H. Chi, E. L. Jones, L. P. Grandham: Enhancing Mentoring Between Alumni and


10. Most recent professional development activities:

SURA IT Scientific Visualization Workshop, March 30, 2012, Tallahassee, FL.

NCWIT Summit 2010 and 2012-- Learn about leading-edge research and ideas for recruiting, retaining, and raising awareness about women in Information technology


Teaching Computing to STEM Students via Visualization Tools, Paper Presentation, ICCS 2011, June 1-3, 2011, Singapore.

IA at FAMU: Broadening IA Awareness & Competency, 6th Annual Information Assurance Symposium, February 8, 2011, Hampton, VA

Curriculum Vitae

1. Name: Deidre W. Evans

2. Education:
   Ph.D., Electrical Engineering, Georgia Institute of Technology, 1994
   MSEE, Electrical Engineering, Georgia Institute of Technology, 1990
   BEE, Electrical Engineering, Georgia Institute of Technology, 1988
   BS, Computer Science, Spelman College, 1988

   18 graduate hours in Software Engineering Science (Florida A&M University)

3. Academic experience:
   Department of Computer and Information Sciences, Florida A&M University, Tenured Associate Professor (2002-present), fulltime
   Department of Computer and Information Sciences, Florida A&M University, Tenured Associate Professor & Associate Chairperson (1999-2002), fulltime
   Department of Computer and Information Sciences, Florida A&M University, Assistant Professor & Associate Chairperson (1998-1999), fulltime
   Department of Computer and Information Sciences, Florida A&M University, Assistant Professor (1994-1998), fulltime
   Physics Department, Morehouse College, Adjunct Instructor, (1990-1992), part-time.

4. Non-academic experience:

5. Certifications or professional registrations:

6. Current membership in professional organizations:

7. Honors and awards:

8. Service activities:
   National Science Foundation Advisory Committee for Cyberinfrastructure (2012-2016)

9. Most important publications and presentations from the past five years:

10. Most recent professional development activities:
Curriculum Vitae

1. Name: Bobby Granville

2. Education:
   - Ph.D. Computer Science Florida State University 89-98
   - M.S. Computer Science Georgia Institute of Technology 72-75
   - B.S. Mathematics Morris Brown College 67-70

3. Academic experience:
   - Department of Computer and Information Sciences (CIS), Florida A&M University (FAMU), Associate Professor (2004- ), fulltime
   - Department of CIS, FAMU, Assistant Professor (1995-2004), fulltime
   - Department of CIS, FAMU Visiting Instructor (1992 - 1993)

4. Non-academic experience
   - Sperry Corp. (Unisys / Univac), Senior Software Engineer, (1979 - 1987)
     Defense Products Group, Clearwater, Florida 33518
     Responsibilities as Software Engineer included developing computer software/firmware support systems; preparing the required MIL specification documents; coordinating Engineering efforts in Software Acceptance Test Procedures; providing planning & technical logistics support in customer Design Reviews; and producing Job Cost Analysis with Quotation estimates for the described tasks; scheduling & engineering software cost/man-hour computations.
   - Southern Bell (Bell South) Telephone Co., Computer Systems Analyst, (1971 - 1979)
     Headquarters Interdepartmental R & D, Atlanta, Georgia 30301
     Duties were to develop those automated application systems which spanned across multiple departments boundaries. This included planning, designing, coding, documenting, and testing of new computer application systems.
     Computer programs were developed to automate three systems in particular, the Automatic Intercept System Network, Non Published Number System Network, and Centralized Service Observance Network. These systems were applicable over a five-state area. Each system interfaces with the company’s Service Order Network and AT&T Bell Lab’s Automatic Number Identification System.

5. Certifications or professional registrations
   - Collaborative Institutional Training Initiative (CITI), Principal Investigator – Responsible Conduct in Research Curriculum, (July 2012)

6. Current membership in professional organizations
   - Member, Upsilon Pi Epsilon (National Computer Science Honor Society) - FSU Chapter
7. Honors and awards
   • Accreditation Recognition for Outstanding Contribution (2008-2012).
   • Assessment Training and Research Institute Recognition (May 21-23, 2009)
   • Delores Auzzane Fellow (1991 & 1992)
   • Upsilon Pi Epsilon (National Computer Science Honor Society, FSU Chapter), (Spring, 1992)
   • FGAMP Fellow (1993-1994)
   • McKnight Doctoral Fellow (1987 – 1990)
   • NASA Faculty Fellow, Jet Propulsion Laboratory, Pasadena, CA, (Summer 2002)

8. Service activities (within and outside of the institution)
   • CPATH-II Learning Research Grant, Auburn University (2010-2012)
   • Special Session Chair, Journal of Intelligent Systems, (2011).
   • CIS Department Level Assessment Coordinator, FAMU (2006- )
   • CIS Quality Assurance Committee Chair & Coordinator of Service Courses (2002- )
   • Organizing Committee member for The MULTICONF co-sponsored by the International Society for Research in Science and Technology (ISRST) (2007-2010)
   • Program Committee Co-Chair, Enterprise Information Systems and Web Technologies at The MULTICONF of EISWT-07, EISWT-08, EISWT-09, and EISWT-10,
   • Session Chair on Fuzzy Relational Systems, The 3rd Indian International Conference on Artificial Intelligence (IICAI-07), Pune, India, (Dec 17-19, 2007)

9. Briefly list the most important publications and presentations from the past five years – title, co-authors if any, where published and/or presented, date of publication or presentation
   • Studio Based Research Results Presentation, Coeurd’Alene, Idaho (June 19-22, 2011)
   • SACS Commission on Colleges, Conference Roundtable Presentation, “Assessment in Graduate Programs”, Atlanta (2009)
   • Assessment Presentation, Assessment Training and Research Institute (May 21-23, 2009)

10. Briefly list the most recent professional development activities
   • Digital Media Learning Workshop, UNCF, MacArthur Foundation, Atlanta (2011)
   • Studio-Based Faculty Development Workshop, Coeurd’Alene, Idaho (June 19-22, 2011)
   • MyItLab (Learning Management System) Workshop, Weston, Florida (May 13-14, 2011)
   • Assessment Training and Research Institute (ATARI), (2009 and 2010)
   • NSF Grant Writing Workshop, Washington, D.C. (2010)
   • FAMU Annual University Teaching Improvement Workshops
CURRICULUM VITAE

1. Name: Edward L. Jones

2. Education:
   Ph.D., Computer Science, University of North Carolina at Chapel Hill, 1984.
   M.S., Computer Science, Cornell University.
   B.S., summa cum laude, Mathematics, Johnson C. Smith University, 1972.

3. Academic experience:
   Department of Computer and Information Sciences (CIS), Florida A&M University (FAMU), Associate/Professor and Chair (2001-2012), full time.
   FAMU CIS Department, Associate Professor (1998-2001), full time.
   Department of Mathematics and Computer Science, Winston-Salem State University, Assistant/Associate Professor (1981-1985), full time.
   Florida Tech, Graduate Adjunct Faculty (1989-1994), part time.

4. Non-academic experience:
   IBM Corporation, Research Triangle Park NC, Summer Intern (1979), part time.

5. Certifications or professional registrations: none.

6. Current membership in professional organizations:
   Association for Computing Machinery

7. Honors and awards:

8. Service activities:
   FAMU Faculty Senator (2008-2012)
   FAMU Student Technology Fee Committee (2009-present)
   Director, Florida A&M University Center for Secure Computing and Information Assurance (2009-2012).
Board Member, ECHO Ministries, Tallahassee, Florida (2008-2010).

Board Member, Association of Computer/Information Sciences and Engineering Departments at Minority Institutions (ADMI), 2003-2006, 2009-11.

9. Most important publications and presentations from the past five years:

Mehdi Jazayeri, Edward L. Jones, and Gail Murphy, “Panel: Innovative Approaches to the CS1/CS2 Sequence,” Software Engineering Educators Symposium (SEES), November 8, 2010, Santa Fe, New Mexico, US.

Peter Clarke, Tariq King, Edward Jones, and Andrew Allen, “Using a web-based repository to integrate testing tools into programming courses,” SPLASH Educators' and Trainers' Symposium, October 17-21, 2010, Reno/Nevada, USA, 193-200.


10. Most recent professional development activities:

Software Engineering Educators Symposium (SEES), November 8, 2010, Santa Fe, New Mexico, US.

Workshop on Integrating Software Testing into Programming Courses (WISTPC 09), held at Florida International University, Miami, Florida, March 16-17, 2009, with Peter Clarke of FIU. Funded through NSF award #0736771, Edward Jones, PI.

2008 Computing Research Association (CRA) Travel Grant for CRA Computer Science Chairs Meeting, July 13-15, 2008, Snowbird, Utah, valued at $1500
Curriculum Vitae

1. Name: **Bhanu Prasad**

2. Education:
   Ph.D., Computer Science and Engineering, Indian Institute of Technology Madras, 1998
   Master of Technology, Computer Science and Technology, Andhra University, 1990

3. Academic experience:
   Department of Computer and Information Sciences (CIS), Florida A&M University (FAMU), Associate Professor and Chair (2012-tilldate), fulltime
   Department of CIS, FAMU, Associate Professor (2009-tilldate), fulltime
   Department of CIS, FAMU, Assistant Professor (2003-2009), fulltime
   School of Computer and Information Sciences, Georgia Southwestern State University, Assistant Professor (2000-2003), fulltime.

4. Non-academic experience:
   Hyperion Solutions Corporation, Associate Software Engineer. Research, design and development of software (1999-2000), fulltime
   Infosys Technologies, Software Consultant. Training and research in software (1998-1999), fulltime
   Future Software Private Ltd., Senior Software Engineer. Software design and development (1997-1998), fulltime

5. Certifications or professional registrations:
   Rational Rose certificate from Rational Software Corporation, 1999
   Rational Unified Process certificate from Rational Software Corporation, 1999
   Hyperion Essbase Introduction certificate from Hyperion Solutions Corporation, 1999

6. Current membership in professional organizations:
   International Association for Technology Research, India

7. Honors and awards:
   Keynote speaker, International Conference on Communication and Computing Technologies, February 2011, India
   Keynote speaker, First International Conference on Information Systems and Software Engineering, December 2009, India

8. Service activities:
   Student mentor at WT Moore Elementary School, Tallahassee, Florida, 2009-2012
   Webmaster, Arvah Branch Home Owners Association (non-profit), 2009-till date
   Member of the Executive Advisory Committee, Department of Mathematics and Computer Science, Grambling State University, Grambling, Since 2005
   Search Committee Member, Computer Support Analyst, Department of CIS, FAMU, 2011.
   External Examiner for the Ph.D. dissertation on “Classification and feature Selection
Algorithms for DNA Sequence, Protein Sequence, and Gene Expression Data”, Jadavpur University, Kolkata, January 2011.

9. Most important publications and presentations from the past five years:
   A Parallel Approach for Solving a Large-Scale Traveling Salesman Problem, R. Bazylevych, R. Dupas, B. Kuz, R. Kutelmakh, L. Bazylevych, Proceedings of the Fifth Indian International Conference on Artificial Intelligence, Tumkur, India, December 14-16, 2011
   Mining Multiple Large Data Sources, A. Adhikari, P.R. Rao, J. Adhikari, International Arab Journal of Information Technology, 7(3), July 2010
   Test Case Prioritization for Regression Testing, P.R. Srivastava, Proceedings of the International Conference on Software Engineering Theory and Practice, Orlando, USA, July 12-14, 2010

10. Most recent professional development activities:
    Program Committee Member, 8th International Conference on Services Computing, USA, July 2011
    Program Committee Co-Chair, 5th Indian International Conference on Artificial Intelligence, India, December 2011
    Program Committee Member, Canadian Conference on Artificial Intelligence, Canada, May 2011
    Program Committee Member, 5th International KES Conference on Agents and Multi-agent Systems –Technologies and Applications, UK, June 2011
    Program Committee Member, 4th International Conference on Computational Collective Intelligence Technologies and Applications, Vietnam, November 2012.
Curriculum Vitae

1. Name: Edwina Jacobs

2. Education:
   MS, Software Engineering Science, Florida A & M University, 2015
   BS, Computer Information Systems, Florida A & M University, 2008

3. Academic experience:
   Department of Computer and Information Sciences, Florida A&M University, Instructor,
   (2017 – present ), fulltime
   Department of Computer and Information Sciences, Florida A&M University, Visiting
   Instructor,
   (2016 – 2017), fulltime

4. Non-academic experience:

5. Certifications or professional registrations:

6. Current membership in professional organizations:

7. Honors and awards:

8. Service activities (within and outside of the institution):
   Faculty Advisor, Secured Rattler Clube ( 2016 – present )
   Content Manager, CIS Website ( 2016 – present )
   Content Manager, Center for Cyber Security ( 2016 – present )

9. Briefly list the most important publications and presentations from the past five years – title,
   co-authors if any, where published and/or presented, date of publication or presentation:

10. Briefly list the most recent professional development activities:
Curriculum Vitae

1. Name: Jon deGoicoechea

2. Education
   PhD Coursework-Information Assurance and Security, Capella University, 2012-2018
   Masters of Information Technology, American Intercontinental University, 2001
   Bachelor of Science, Corrections/Psychology, Jacksonville State University, 1981

3. Academic experience:
   - Department of Computer Information Systems, Florida A&M University, Instructor, full time, 2017-Present
   - Department of Information Technology, Keiser University, Instructor/Online Liaison, full time, 2014-2017
   - Department of Computer Science, Lake-Sumter State College, Interim Computer Science Instructor, full time, 2013-2013
     Online Adjunct Instructor, part time, 2016-2018
   - Information Technology Program, Fortis College, Program Director (Chairperson), full time, 2007-2013
   - Department of Computer Science, Jones College, Lead Adjunct Instructor/Online Instructor, part time, 2002-2010

4. Non-academic experience:
   - WeAreTeKz, Owner/Technician, part time, 2001-2014
   - The Bombay Company, Assistant Manager, full time, 1998-2004
   - Foundation for Learning, Program Coordinator, full time, 1998-1999
   - CarTempsUSA, Car Rental Assistant Manager, full time, 1997-1998
   - Tri-Lambda Cleaning Services, Owner, part time, 1996-1998
   - Gordon’s Jewelers, Sales Person, part time, 1994-1996
   - Pricor, Inc., Juvenile Detention Center Program Coordinator/Counselor, full time, 1989-1991
   - Century 21 AAA Realty, Real Estate Agent, part time, 1986-1987
   - Calhoun-Cleburne Mental Health Board, Community Program Coordinator, full time, 1982-1989

5. Certifications or professional registrations
   - A+  #COMP001006317739
   - Network+  #COMP001006317739
   - Security+  #COMP001006317739
   - MCTS-Vista  #sr-4985863

6. Current membership in professional organizations
   Institute of Electrical and Electronic Engineers (IEEE)
   Association for Computing Machinery (ACM)
7. Honors and awards
   Not Applicable

8. Service activities (within and outside of the institution)
   Faculty Advisor - Secured Rattlers
   Department Quality Team Member

9. Briefly list the most important publications and presentations from the past five years –
   title, co-authors if any, where published and/or presented, date of publication or
   presentation
   Not Applicable

10. Briefly list the most recent professional development activities: Continuing Education
    Courses
    • Digital Forensics, Charles Sturt University, Waga Waga, Australia
    • Cybersecurity Management, Charles Sturt University, Waga Waga, Australia
    • Introduction to Business Analysis, Charles Sturt University, Waga Waga, Australia
    • Internet of Things: How did we get here? University of California, San Diego on
      Coursera.com
    • Introduction to Big Data by University of California, San Diego on Coursera.com
Curriculum Vitae

1. Name: Vanessa Coote

2. Education –
   Master’s of Science, Computer Information Systems, Florida Institute of Technology, 2012
   Bachelor of Science, Information Technology, University of Belize, 2010

3. Academic experience –
   Florida A&M University, Instructor, 2018 – present, Full Time

4. Non-academic experience –
   USSI Global, Full Stack Developer, Design, develop and implement web-based applications. 2013 – 2018, full time

5. Certifications or professional registrations

6. Current membership in professional organizations

7. Honors and awards
   Phi Kappa Phi Honor Society

8. Service activities (within and outside of the institution)

9. Briefly list the most important publications and presentations from the past five years –
   title, co-authors if any, where published and/or presented, date of publication or presentation

10. Briefly list the most recent professional development activities
Subject: Master of Science in Cybersecurity (CIP Code 11.1003)

Proposed Board Action: The Department of Computer and Information Sciences (CIS) at Florida A&M University proposes to offer a Master of Science in Cybersecurity (CyS) degree. The general goals of the degree program are to provide breadth in cybersecurity foundations, depth in selected areas, and balance of experiential learning and research. The program seeks to serve a range of student and professional needs, including supporting the need for cybersecurity competencies in areas such as; STEM, health care, criminal justice and social sciences. Program graduates will possess the ability to assume professional positions of leadership and to pursue additional advanced study in cybersecurity.

This program directly supports the SUS Strategic Planning Goal, Increase the Number of Degrees Awarded in STEM and Other Areas of Strategic Emphasis, specifically graduate degrees. Cybersecurity is universally recognized as a grand challenge requiring the development of a competent workforce, creative research into cost-effective mechanisms for prevention, detection and recovery from cyber aggressions and vigilance in promoting public awareness of the role of individual responsibility. The proposed program will ensure participation by underrepresented citizens in advancing the cybersecurity workforce and brain trust.

Estimated enrollment projections for years one to five are as follows:

<table>
<thead>
<tr>
<th>IMPLEMENTATION TIMEFRAME</th>
<th>PROJECTED ENROLLMENT</th>
</tr>
</thead>
<tbody>
<tr>
<td>YEAR 1</td>
<td>3</td>
</tr>
<tr>
<td>YEAR 2</td>
<td>14</td>
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<tr>
<td>YEAR 3</td>
<td>17</td>
</tr>
<tr>
<td>YEAR 4</td>
<td>21</td>
</tr>
<tr>
<td>YEAR 5</td>
<td>25</td>
</tr>
</tbody>
</table>

Attachments: Yes

1. FAMU MS Cybersecurity Proposal
Board of Governors, State University System of Florida

Request to Offer a New Degree Program
(Please do not revise this proposal format without prior approval from Board staff)

Florida A&M University
University Submitting Proposal

Science and Technology
Name of College(s) or School(s)

Cybersecurity
Academic Specialty or Field

11.1003
Proposed CIP Code

The submission of this proposal constitutes a commitment by the university that, if the proposal is approved, the necessary financial resources and the criteria for establishing new programs have been met prior to the initiation of the program.

March 5, 2020
Date Approved by the University Board of Trustees

Signature of Chair, Board of Trustees

Date

President

Vice President for Academic Affairs

Date

Provide headcount (HC) and full-time equivalent (FTE) student estimates of majors for Years 1 through 5. HC and FTE estimates should be identical to those in Table 1 in Appendix A. Indicate the program costs for the first and the fifth years of implementation as shown in the appropriate columns in Table 2 in Appendix A. Calculate an Educational and General (E&G) cost per FTE for Years 1 and 5 (Total E&G divided by FTE).

<table>
<thead>
<tr>
<th>Implementation Timeframe</th>
<th>Projected Enrollment (From Table 1)</th>
<th>Projected Program Costs (From Table 2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HC</td>
<td>FTE</td>
</tr>
<tr>
<td>Year 1</td>
<td>3</td>
<td>2.25</td>
</tr>
<tr>
<td>Year 2</td>
<td>14</td>
<td>10</td>
</tr>
<tr>
<td>Year 3</td>
<td>17</td>
<td>12</td>
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<tr>
<td>Year 4</td>
<td>21</td>
<td>14.5</td>
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<tr>
<td>Year 5</td>
<td>25</td>
<td>17</td>
</tr>
<tr>
<td></td>
<td>16,065</td>
<td>273,104</td>
</tr>
</tbody>
</table>

Note: This outline and the questions pertaining to each section must be reproduced within the body of the proposal to ensure that all sections have been satisfactorily addressed. Tables 1 through 4 are to be included as Appendix A and not reproduced within the body of the proposals because this often causes errors in the automatic calculations.
INTRODUCTION

I. Program Description and Relationship to System-Level Goals

A. Briefly describe within a few paragraphs the degree program under consideration, including (a) level; (b) emphases, including majors, concentrations, tracks, or specializations; (c) total number of credit hours; and (d) overall purpose, including examples of employment or education opportunities that may be available to program graduates.

Florida Agricultural and Mechanical University is dedicated to the advancement of knowledge, the resolution of complex issues and the empowerment of citizens and communities. This is achieved through academic programs that educate students at the undergraduate, graduate, doctoral and professional levels, preparing them apply their knowledge, critical thinking skills and creativity in their service to society. FAMU has been designated a National Center of Academic Excellence in Cyber Defense Education, and hence is motivated to impact the state of cybersecurity practice and advancement of the field.

The Department of Computer and Information Sciences (CIS) at Florida A&M University proposes to offer the Master of Science program in Cybersecurity. The general goals of the degree program are to provide breadth in cybersecurity foundations, depth in selected areas, and balance of experiential learning and research. The program seeks to serve a range of student and professional needs, including supporting the need for cybersecurity competencies in areas such as STEM, health care, criminal justice and social sciences. Program graduates will possess the ability to assume professional positions of leadership and to pursue additional advanced study in cybersecurity.

Graduates of this program will be equipped to enter career paths such as: Security Analyst, Security Engineer, Security Architect; Security Administrator, etc. Specific SOC 2010 disciplines for CIP 11.1003 include: Computer and Information Systems Managers, Information Security Analysts, Database Administrators, Network and Computer System Administrators, Computer Network Architects, and Computer Network Specialists. While the bachelor’s degree is the typical point of entry for Computer and Information Systems professionals, an advanced degree at the master’s level can aid one in the advancement to upper-level management positions.

A master’s degree in the discipline provides additional training and leadership above what is gained in an undergraduate degree with added attention to problem-solving and critical analysis, which can lead to high-ranking positions. Cybersecurity professionals are highly compensated due to the growing demand of high tech-driven organizations and vulnerability to cyber-attacks. An advance degree beyond the baccalaureate degree can pay for itself with cybersecurity outpacing many other career sectors.

B. Please provide the date when the pre-proposal was presented to CAVP (Council of Academic Vice Presidents) Academic Program Coordination review group. Identify any concerns that the CAVP review group raised with the pre-proposed program and provide a brief narrative explaining how each of these concerns has been or is being addressed.
The pre-proposal for the Bachelor of Science degree in Cybersecurity was presented to the Council of Academic Vice Presidents (CAVP) Academic Program Coordination Group on Thursday, November 29, 2018 and was approved with no concerns.

C. If this is a doctoral level program, please include the external consultant’s report at the end of the proposal as Appendix D. Please provide a few highlights from the report and describe ways in which the report affected the approval process at the university.

This section is not applicable.

D. Describe how the proposed program is consistent with the current State University System (SUS) Strategic Planning Goals. Identify which specific goals the program will directly support and which goals the program will indirectly support (see link to the SUS Strategic Plan on the resource page for new program proposal).

The proposed Master of Science in Cybersecurity degree will provide advanced training for graduates and professionals to obtain advanced leadership skills to achieve high-ranking positions in an industry with exponential growth, particularly as new technologies emerge. The proposed M.S. Cybersecurity program will provide pathways for graduates to obtain knowledge to fill a critical void in cybersecurity professionals nationally and in the State of Florida. Beyond practical experience gained in an undergraduate program, the master’s will provide industry knowledge as it relates to solving critical problems necessary for managerial training. The program directly supports the SUS Strategic Planning Goal, Increase the Number of Degrees Awarded in STEM and Other Areas of Strategic Emphasis. It also supports the SUS Strategic Planning Goal, to Increase Degree Productivity and Program Efficiency.

Cybersecurity is universally recognized as a grand challenge requiring the development of a competent workforce, creative research into cost-effective mechanisms for prevention, detection and recovery from cyber aggressions, and vigilance in promoting public awareness of the role of individual responsibility. The proposed program will ensure participation by underrepresented citizens in advancing the cybersecurity workforce and brain trust.

This new program is consistent with the strategic direction of Florida A&M University, the College of Science and Technology, and the Computer & Information Sciences Department, as summarized in Table A.

<table>
<thead>
<tr>
<th>Table A. Strategic Relevance of Proposed Program</th>
</tr>
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<tbody>
<tr>
<td><strong>Department Mission</strong></td>
</tr>
<tr>
<td><strong>Relevant CST Strategic Initiatives</strong></td>
</tr>
<tr>
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</tbody>
</table>
FAMU MS Cybersecurity

9: Increase distance learning course offerings.

<table>
<thead>
<tr>
<th>Relevant FAMU Strategic Priorities</th>
<th>Priority 1: Exceptional Student Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Goal 1: Enhance pathways to degree attainment.</td>
</tr>
<tr>
<td></td>
<td>Goal 4: Increase the number of students graduating from programs in areas of high employer demand.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>SUS Goals</th>
<th>Teaching &amp; Learning</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Increase the Number of Degrees Awarded in STEM and Other Areas of Strategic Emphasis.</td>
</tr>
<tr>
<td></td>
<td>Increase Degree Productivity and Program Efficiency.</td>
</tr>
<tr>
<td></td>
<td>Strengthen Quality &amp; Reputation of Academic Programs and Universities.</td>
</tr>
</tbody>
</table>

| SUS Performance Funding Metrics Impacted | Metric 8: Graduate degrees awarded within programs of strategic emphasis |

E. If the program is to be included in a category within the Programs of Strategic Emphasis as described in the SUS Strategic Plan, please indicate the category and the justification for inclusion.

The Programs of Strategic Emphasis Categories:
1. Critical Workforce:
   - Education
   - Health
   - Gap Analysis
2. Economic Development:
   - Global Competitiveness
3. Science, Technology, Engineering, and Math (STEM)

Please see the Programs of Strategic Emphasis (PSE) methodology for additional explanations on program inclusion criteria at the resource page for new program proposal.

This program falls under Programs of Strategic Emphasis, Category 3 - STEM. The program is offered in the College of Science and Technology and provides a critical infrastructure component of today’s knowledge economy, for which there is a critical workforce shortage. The program is also consistent with national initiatives, such as the National Centers of Academic Excellence and the National Initiative for Cybersecurity Education.

F. Identify any established or planned educational sites at which the program is expected to be offered and indicate whether it will be offered only at sites other than the main campus.

The proposed program will be offered on the main campus, in both face-to-face and online delivery mode.

INSTITUTIONAL AND STATE LEVEL ACCOUNTABILITY
II. Need and Demand

A. Need: Describe national, state, and/or local data that support the need for more people to be prepared in this program at this level. Reference national, state, and/or local plans or reports that support the need for this program and requests for the proposed program which have emanated from a perceived need by agencies or industries in your service area. Cite any specific need for research and service that the program would fulfill.

National demand for programs in cybersecurity is critical locally, regionally, and nationally, as employers need more complicated trained professionals to help reduce the vulnerability in an organization’s infrastructure. The Comprehensive National Cybersecurity Initiative (CNCI) has identified a need of expanding cyber education as one method to strengthen the future cybersecurity environment. Such education provides graduates with keen knowledge and abilities to implement cyber technologies that protect organizations from threats and improve their security practices. The State of Florida also sees cybersecurity as a particular need for the State with the launch of the Florida Center for Cybersecurity (FC2) who has established a goal of making Florida the national leader in cybersecurity education. To date, FC2, renamed CyberFlorida, has stimulated collaboration amongst the 12 SUS institutions resulting in cross-institutional research and sharing of educational resources. The proposed program has been influenced by these collaborations and work on the SUS Advisory Council to CyberFlorida.

National trends show a dramatic rise in cybersecurity degree programs, motivated by a critical workforce shortage, exacerbated by an increasing frequency and sophistication of attacks on society and institutions. The 2018 Cybersecurity Workforce Study (https://www.isc2.org/Research/Workforce-Study), reports a global shortage of 2.93 million cybersecurity professionals and, because of existing cyber workforce shortage, over 60% of the companies polled felt a heightened risk of cyberattack. Respondents felt the need for improved skills for entry-level cybersecurity professionals, coupled with employer commitments to continued professional development for cybersecurity personnel. The study found that cybersecurity professionals make about $85K per year, on average; those with security certifications have an average salary of $88K, while those without earn much less—about $67K, on average.

The Bureau of Labor Statistics (BLS) shows national demands for professionals in this industry are growing with the bachelor’s degree as the typical level of entry under the category of Computer and Information Systems Security/Information Assurance (CIP 11.1003). Appropriate job titles aligned under SOC 2010 for this same category include:

- Computer and Information Systems Managers (11.3% expected job growth)
- Information Security Analysts (31.6% expected job growth)
- Database Administrators (9.0% expected job growth)
- Network and Computer Systems Administrators (4.7% expected job growth)
- Computer Network Architects (5.3% expected job growth)
- Computer Network Support Specialists (6.4% expected job growth)

As shown above, growth in employment for professionals in the Computer and Information Systems Security ranges from 4.7% - 31.6% form 2018-2028, with the greatest need for Information Security Analysts (31.6%) and Computer and Information Systems Managers (11.3%). For the management type of positions, a master’s degree could enhance one’s
opportunities for such positions. An individual with a master’s degree is able to combine training received in an undergraduate program to apply technical skills in day-to-day operations and at the same time utilize advanced training in management roles to oversee those operations.

Similar to national projections by BLS, the State of Florida has great demand for cybersecurity professionals based on projections of the Florida Department of Economic Opportunity (DEO). For the same industry fields noted above, projected increase in work demand ranged from 8.8% - 26.9% from 2019-2027.

- Computer and Information Systems Managers (13.4% expected job growth)
- Information Security Analysts (26.9% expected job growth)
- Database Administrators (13.0% expected job growth)
- Network and Computer Systems Administrators (8.8% expected job growth)
- Computer Network Architects (9.2% expected job growth)
- Computer Network Support Specialists (12.4% expected job growth)

For Florida, the greatest growth is also projected for Information Security Analysts (26.9%) and Computer and Information Systems Managers (13.4%).

Finally, the chronic national shortage of minority professionals in computing remains. The mission of Florida A&M University in meeting the educational needs of African Americans and other minorities, combined with over 130 years of experience in nurturing minorities, gives the University a unique opportunity to address and successfully ameliorate this national problem. The introduction of the cybersecurity program at FAMU, will position State of Florida to show significant gains in the production of minority cybersecurity professionals.

B. Demand:  Describe data that support the assumption that students will enroll in the proposed program. Include descriptions of surveys or other communications with prospective students.

Within academic years 2017-2019, over 270 students enrolled in undergraduate cybersecurity courses required for the Cyber Defense certificate offered at FAMU. These courses are popular electives for CIS majors (CS, IT and Computer Information Systems) and also for students in Allied Health programs who have a need for trained professionals in Medical Information Privacy and Security. Demand for first these courses is great for both majors and non-CIS majors is also significant: over 16% of the students in the first course, CIS 4360 Introduction to Security, are non-majors.

The M.S. Cybersecurity aligns with the existing undergraduate and graduate programs within CIS and also with the proposed B.S. Cybersecurity. The department currently offers an array of graduate courses in that lead to thesis projects and research publications in cybersecurity, including mobile digital forensics for Android and Apple iOS devices, intrusion detection strategies, etc.

As noted earlier, organizations are seeking more and more trained professionals in cybersecurity within a tech-driven world. BLS data suggests that the need for professionals in
this area is a dire need. A graduate degree in Cybersecurity positions graduates competitively for advanced employment within the profession.

**C. If substantially similar programs (generally at the four-digit CIP Code or 60 percent similar in core courses), either private or public exist in the state, identify the institution(s) and geographic location(s). Summarize the outcome(s) of communication with such programs with regard to the potential impact on their enrollment and opportunities for possible collaboration (instruction and research). In Appendix C, provide data that support the need for an additional program.**

The proposed MSCyS supports the SUS vision for Florida to be a national leader in cybersecurity education and research. The program provides the focused graduate education necessary to meet our state and national security challenges and create economic opportunities for students within and outside of Florida, particularly minority students consistent with FAMU’s historic mission. Specifically, the proposed degree will position FAMU to increase the production of graduates who are prepared “to apply their knowledge, critical thinking skills and creativity” to meet the growing need to secure our Nation’s information systems. It will also aid the Board of Governors in meeting its strategic goals to (1) Increase degree productivity, particularly in Programs of Strategic Emphasis, and (2) Increase research activity and attract more external funding. The program is also consistent with FAMU’s mission “dedicated to the advancement of knowledge, resolution of complex issues and the empowerment of citizens and communities”.

Within the State University System, Florida International University (FIU) and University of West Florida (UWF) offer a master’s degree in Cybersecurity within the 11.1003 CIP. To date, FIU has awarded 26 degrees in this discipline. Because of the high demand for future growth in cybersecurity, negative impact is not anticipated for either institution with the implementation of the M.S. Cybersecurity at FAMU. Both institutions indicated support at the CAVP Academic Coordination Group when the proposal for the master’s was presented. CIS Department Graduate Coordinator has contacted the FIU counterpart to explore opportunities for collaboration between the programs. Both institutions also participate in the CyberFlorida SUS Advisory Council which regularly reviews matters of curriculum and expanding access to cybersecurity education. Prospects for continued and expanded collaboration are promising.

**D. Use Table 1 in Appendix A (1-A for undergraduate and 1-B for graduate) to categorize projected student headcount (HC) and Full Time Equivalents (FTE) according to primary sources. Generally undergraduate FTE will be calculated as 30 credit hours per year and graduate FTE will be calculated as 24 credit hours per year. Describe the rationale underlying enrollment projections. If students within the institution are expected to change majors to enroll in the proposed program at its inception, describe the shifts from disciplines that will likely occur.**

New students for the M.S. in Cybersecurity program are anticipated from graduates of FAMU’s undergraduate programs within the Computer Science department, program graduates from other SUS institutions, and working professionals, and alumni.

**E. Indicate what steps will be taken to achieve a diverse student body in this program. If the proposed program substantially duplicates a program at FAMU or FIU, provide, (in consultation with the affected university), an analysis of how the program might have an**
impact upon that university’s ability to attract students of races different from that which is predominant on their campus in the subject program. The university’s Equal Opportunity Officer shall review this section of the proposal and then sign and date Appendix B to indicate that the analysis required by this subsection has been completed.

FLORIDA A&M UNIVERSITY NON-DISCRIMINATION POLICY STATEMENT

It is the policy of Florida A&M University that each member of the University community is permitted to work or attend class in an environment free from any form of discrimination including race, religion, color, age, disability, sex, sexual harassment, sexual orientation, gender identity, gender expression, marital status, national origin, and veteran status as prohibited by State and Federal Statues. This commitment applies to all areas affecting students, employees, applicants for admission and applicants for employment. It is also relevant to the University's selection of contractors, suppliers of goods and services and any employment conditions and practices.

III. Budget

A. Use Table 2 in Appendix A to display projected costs and associated funding sources for Year 1 and Year 5 of program operation. Use Table 3 in Appendix A to show how existing Education & General funds will be shifted to support the new program in Year 1. In narrative form, summarize the contents of both tables, identifying the source of both current and new resources to be devoted to the proposed program. (Data for Year 1 and Year 5 reflect snapshots in time rather than cumulative costs.)

Year one of the Cybersecurity program will implemented using mainly existing resources and two new faculty hires. Additionally, reallocated monies will be utilized for administrative and technical support. By year five, it is anticipated that monies will have been allocated for the following:

a. Continuing of support for existing faculty
b. One new faculty hire
c. Graduate assistantships to support faculty in the development, delivery and evaluation of instruction and laboratories.
d. General operating and OPS dollars
e. Additional physical space

In year five (5), the program will be approaching steady state operation.

B. Please explain whether the university intends to operate the program through continuing education, seek approval for market tuition rate, or establish a differentiated graduate-level tuition. Provide a rationale for doing so and a timeline for seeking Board of Governors’ approval, if appropriate. Please include the expected rate of tuition that the university plans to charge for this program and use this amount when calculating cost entries in Table 2.

The program will not be operated through continuing education.

C. If other programs will be impacted by a reallocation of resources for the proposed program, identify the impacted programs and provide a justification for reallocating resources.
Specifically address the potential negative impacts that implementation of the proposed program will have on related undergraduate programs (i.e., shift in faculty effort, reallocation of instructional resources, reduced enrollment rates, greater use of adjunct faculty and teaching assistants). Explain what steps will be taken to mitigate any such impacts. Also, discuss the potential positive impacts that the proposed program might have on related undergraduate programs (i.e., increased undergraduate research opportunities, improved quality of instruction associated with cutting-edge research, improved labs and library resources).

No other programs will be impacted, since no reallocation of resources is required.

D. Describe other potential impacts on related programs or departments (e.g., increased need for general education or common prerequisite courses, or increased need for required or elective courses outside of the proposed major).

The M.S. Cybersecurity will have very little impact on existing programs. Many of the cybersecurity courses have already been developed and utilized within existing curricula. Some faculty time and effort will be reallocated for the new program. However, that will be mitigated by the hiring of two new faculty with CIS. In addition to full-time faculty, students will be exposed to cybersecurity professionals who can provide valuable knowledge as it related to Cybersecurity competencies, role modeling, and connection to the workplace.

E. Describe what steps have been taken to obtain information regarding resources (financial and in-kind) available outside the institution (businesses, industrial organizations, governmental entities, etc.). Describe the external resources that appear to be available to support the proposed program.

FAMU is an active member of the CAE community, which can be utilized as a source of increased awareness of funding opportunities through federal agencies. The CIS department is currently using shared resources in Florida CyberHub to create virtual cybersecurity lab experiments. Additional resources are provided through the NSF-funded National Cyberwatch Center1.

IV. Projected Benefit of the Program to the University, Local Community, and State

Use information from Tables 1 and 2 in Appendix A, and the supporting narrative for “Need and Demand” to prepare a concise statement that describes the projected benefit to the university, local community, and the state if the program is implemented. The projected benefits can be both quantitative and qualitative in nature, but there needs to be a clear distinction made between the two in the narrative.

The introduction of the M.S program in Cybersecurity at Florida Agricultural and Mechanical University will provide opportunities for all students in the university to earn graduate certificates and master’s degrees in Cybersecurity. The program will also meet the need for

1 https://www.nationalcyberwatch.org/programs-resources/complete-cloud-based-lab-solution/ (NSF-funded, free access)
many local IT professionals to become credentialed with the M.S. degree, with the prospect of career advancement. As new technology emerges, more individuals trained in cybersecurity will be critical, particularly at advanced levels. Implementing tools based on managerial needs within this profession provides solutions to help organizations and managers overcome or respond to vital threats from existing and emerging technology.

V. Access and Articulation – Bachelor’s Degrees Only

A. If the total number of credit hours to earn a degree exceeds 120, provide a justification for an exception to the policy of a 120 maximum and submit a separate request to the Board of Governors for an exception along with notification of the program’s approval. (See criteria in Board of Governors Regulation 6C-8.014)

This section is not applicable.

B. List program prerequisites and provide assurance that they are the same as the approved common prerequisites for other such degree programs within the SUS (see link to the Common Prerequisite Manual on the resource page for new program proposal). The courses in the Common Prerequisite Counseling Manual are intended to be those that are required of both native and transfer students prior to entrance to the major program, not simply lower-level courses that are required prior to graduation. The common prerequisites and substitute courses are mandatory for all institution programs listed and must be approved by the Articulation Coordinating Committee (ACC). This requirement includes those programs designated as “limited access.”

If the proposed prerequisites are not listed in the Manual, provide a rationale for a request for exception to the policy of common prerequisites. NOTE: Typically, all lower-division courses required for admission into the major will be considered prerequisites. The curriculum can require lower-division courses that are not prerequisites for admission into the major, as long as those courses are built into the curriculum for the upper-level 60 credit hours. If there are already common prerequisites for other degree programs with the same proposed CIP, every effort must be made to utilize the previously approved prerequisites instead of recommending an additional “track” of prerequisites for that CIP. Additional tracks may not be approved by the ACC, thereby holding up the full approval of the degree program. Programs will not be entered into the State University System Inventory until any exceptions to the approved common prerequisites are approved by the ACC.

This section is not applicable.

C. If the university intends to seek formal Limited Access status for the proposed program, provide a rationale that includes an analysis of diversity issues with respect to such a designation. Explain how the university will ensure that Florida College System transfer students are not disadvantaged by the Limited Access status. NOTE: The policy and criteria for Limited Access are identified in Board of Governors Regulation 6C-8.013. Submit the Limited Access Program Request form along with this document.

This section is not applicable.

D. If the proposed program is an AS-to-BS capstone, ensure that it adheres to the guidelines approved by the Articulation Coordinating Committee for such programs, as set forth in Rule 6A-10.024 (see link to the Statewide Articulation Manual on the resource page for new program proposal). List the prerequisites, if any, including the specific AS degrees which
may transfer into the program.

This section is not applicable.

INSTITUTIONAL READINESS

VI. Related Institutional Mission and Strength

A. Describe how the goals of the proposed program relate to the institutional mission statement as contained in the SUS Strategic Plan and the University Strategic Plan (see link to the SUS Strategic Plan on the resource page for new program proposal).

FAMU Mission Statement

“Florida Agricultural and Mechanical University (FAMU) is an 1890 land-grant institution dedicated to the advancement of knowledge, resolution of complex issues and the empowerment of citizens and communities. The University provides a student-centered environment consistent with its core values. The faculty is committed to educating students at the undergraduate, graduate, doctoral and professional levels, preparing graduates to apply their knowledge, critical thinking skills and creativity in their service to society. FAMU’s distinction as a doctoral/research institution will continue to provide mechanisms to address emerging issues through local and global partnerships. Expanding upon the University’s land-grant status, it will enhance the lives of constituents through innovative research, engaging cooperative extension, and public service. While the University continues its historic mission of educating African Americans, FAMU embraces persons of all races, ethnic origins and nationalities as life-long members of the university community.”

Table A. Strategic Relevance of Proposed Program

<table>
<thead>
<tr>
<th>Department Mission</th>
<th>To provide fundamental knowledge and relevant experience to support careers involving the application, advancement and creation of computer and information technology to serve industry, government, and society.</th>
</tr>
</thead>
</table>
| Relevant CST Strategic Initiatives | Initiative 1: Provide high quality academic experiences through excellence in teaching and assessment of student learning.  
Goal 1: Enhance the quality of educational experience of students in all degree programs.  
Strategies 6: Develop new graduate degree programs 9: Increase distance learning course offerings. |
| Relevant FAMU Strategic Priorities | Priority 1: Exceptional Student Experience  
Goal 1. Goal 1: Enhance pathways to degree attainment.  
Goal 4. Increase the number of students graduating from programs in areas of high employer demand. |
| SUS Goals | Teaching Increase the Number of Degrees Awarded in STEM and |
Other Areas of Strategic Emphasis.
Increase Degree Productivity and Program Efficiency.
Strengthen Quality & Reputation of Academic Programs and Universities.

| SUS Performance Funding Metrics Impacted | Metric 8: Graduate degrees awarded within programs of strategic emphasis |
B. Describe how the proposed program specifically relates to existing institutional strengths, such as programs of emphasis, other academic programs, and/or institutes and centers.

FAMU carries the designation of National Center of Academic Excellence in Cyber Defense Education. The designation recognizes the strength of the cyber security certificate curriculum, which was shown to map to the NICE framework. The FAMU Center for Cybersecurity was established in 2008 (as FAMU Center for Secure Computing and Information Assurance (FCSCIA)) for the promotion of cybersecurity education, research and outreach. The CIS Department has amassed a solid record of research by undergraduate and graduate students. CIS faculty have successfully collaborated on CyberFlorida seed-funding grants with FSU, UWF and UNF.

Concerns for cybersecurity pervade public, commercial, and private life. This program can enhance the educational experiences of students at the university. The need for cybersecurity literacy is substantial and growing. Each program at the university has unique manifestations of cyber threats, impact and mitigation strategies. For these reasons, it is expected that the proposed program will start by offering general cybersecurity literacy courses at the graduate level, followed by courses designed to address cybersecurity issues unique to a discipline.

Recognizing that as technology advances and the world becomes increasingly information-driven, the demand for cybersecurity professionals continues to increase and the tasks of cybersecurity become progressively more challenging. In response to this national need, the University established the Florida A&M University Center for Cybersecurity (FCCS), which is housed in the Department of Computer and Information Sciences (CIS). FCCS promotes, coordinates, and implements education, research and innovation in cybersecurity. The core objectives and purpose of FCCS include:

- Ensure that the cybersecurity curriculum aligns with standards defined by the NSA/DHS National Centers of Academic Excellence in Cyber Defense (CAE-CD) program
- Increase minority participation in cybersecurity related careers.
- Support university initiatives and projects in cybersecurity.
- Maintain a program of research in cybersecurity.
- Serve as a community, regional and national resource for educational institutions, small businesses, and the general population.

C. Provide a narrative of the planning process leading up to submission of this proposal. Include a chronology in table format of the activities, listing both university personnel directly involved and external individuals who participated in planning. Provide a timetable of events necessary for the implementation of the proposed program.
Planning Process

<table>
<thead>
<tr>
<th>Date</th>
<th>Participants</th>
<th>Planning Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>2016-2017</td>
<td>CST Dean’s Office and CIS Faculty</td>
<td>List of future degree programs</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Degree program included in the approved 2017-2022 strategic plan</td>
</tr>
<tr>
<td>Fall 2018</td>
<td>CIS Chairperson, CST Dean’s Office</td>
<td>Development of Pre-proposal</td>
</tr>
<tr>
<td>November 29, 2018</td>
<td>Dr. Sundra Kincey</td>
<td>Pre-proposal approved by CAVP review group with no concerns</td>
</tr>
<tr>
<td>Fall 2018 – Spring 2019</td>
<td>Dr. Edward Jones and CST Dean’s Office</td>
<td>Development of feasibility study</td>
</tr>
<tr>
<td>March 13, 2019</td>
<td>University Program Authorization Committee (UPARC)</td>
<td>Feasibility student approved</td>
</tr>
<tr>
<td>Spring 2019</td>
<td>Dr. Edward Jones, Dr. Hongmei Chi, Mr. Jon deGoichea, Dr. Deidre W. Evans, and Dr. Sundra Kincey</td>
<td>Development of New Degree Proposal</td>
</tr>
<tr>
<td>Spring 2019</td>
<td>University Committees</td>
<td>University Committee Approval</td>
</tr>
<tr>
<td>Summer 2020</td>
<td>Program Faculty</td>
<td>Curriculum Development of new courses</td>
</tr>
</tbody>
</table>

Events Leading to Implementation

<table>
<thead>
<tr>
<th>Date</th>
<th>Implementation Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>March 2020</td>
<td>Florida A&amp;M University Board of Trustees</td>
</tr>
<tr>
<td>Summer 2020</td>
<td>Submission to Board of Governors Staff</td>
</tr>
<tr>
<td>August 2020</td>
<td>Full implementation of program</td>
</tr>
<tr>
<td>March 2020</td>
<td>Florida A&amp;M University Board of Trustees</td>
</tr>
</tbody>
</table>

VII. Program Quality Indicators - Reviews and Accreditation

Identify program reviews, accreditation visits, or internal reviews for any university degree programs related to the proposed program, especially any within the same academic unit. List all recommendations and summarize the institution's progress in implementing the recommendations.
This section is not applicable.

VIII. Curriculum

A. Describe the specific expected student learning outcomes associated with the proposed program. If a bachelor’s degree program, include a web link to the Academic Learning Compact or include the document itself as an appendix.

The learning outcomes are the following:

1. Graduates will demonstrate knowledge of fundamental topics in computer science and cybersecurity.
2. Graduates will demonstrate the ability to communicate technical information and strategies in oral and written form.
3. Apply security principles and practices to maintain operations in the presence of risks and threats. humans.

B. Describe the admission standards and graduation requirements for the program.

The proposed M.S. in Cybersecurity program follows the admissions policy of the School of Graduate Studies and Research. Admission to the university is subject to minimum standards promulgated by the Board of Trustees. In all admission actions, the university will give attention to the need to satisfy equal opportunity/affirmative action goals. Each person admitted, enrolled, or matriculated must have graduated (received a diploma) from high school or its equivalent (e.g., GED). Other requirements for admission to the university are published by the Florida Agricultural and Mechanical University (FAMU) Office of Admissions (see http://www.famu.edu/index.cfm?admissions&Readmission).

C. Describe the curricular framework for the proposed program, including number of credit hours and composition of required core courses, restricted electives, unrestricted electives, thesis requirements, and dissertation requirements. Identify the total numbers of semester credit hours for the degree.

**Graduate Core (Cybersecurity) (Select minimum of 12 credit hours)**

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 5370</td>
<td>3</td>
</tr>
<tr>
<td>CIS 5371</td>
<td>3</td>
</tr>
<tr>
<td>CIS 6628</td>
<td>3</td>
</tr>
<tr>
<td>COP 5614</td>
<td>3</td>
</tr>
<tr>
<td>COP 5725</td>
<td>3</td>
</tr>
</tbody>
</table>

The student must select two areas of emphasis.
1. Area Emphasis: Cyber Security I - Networks (minimum of 9 credit hours)

<table>
<thead>
<tr>
<th>Course (select any 3 of the following courses)</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CNT 5415  Applied Computer Network Security</td>
<td>3</td>
</tr>
<tr>
<td>CIS 5396  Cyber-Security Forensics</td>
<td>3</td>
</tr>
<tr>
<td>CNT 5412  Network Security, Active &amp; Passive Defenses</td>
<td>3</td>
</tr>
</tbody>
</table>

2. Area of Emphasis: Cyber Security II - Software (minimum of 9 credit hours)

<table>
<thead>
<tr>
<th>Course (select 3)</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>*CEN 5074  Software Security</td>
<td>3</td>
</tr>
<tr>
<td>*CEN 5526  Mobile Computing Security</td>
<td>3</td>
</tr>
<tr>
<td>*CNT 6263: Intro to Cyber Physical Systems Security</td>
<td>3</td>
</tr>
</tbody>
</table>

3. Area of Emphasis: Cyber Security III – Policy & Management (minimum of 9 credit hours)

<table>
<thead>
<tr>
<th>Course (select any 3 - TENTATIVE)</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>*ISS 5653  Cybersecurity Policy and Affairs</td>
<td>3</td>
</tr>
<tr>
<td>TBA xxxx Cyber Intelligence and International Relations.</td>
<td>3</td>
</tr>
<tr>
<td>*PHC 6235 Critical Infrastructure Protection</td>
<td>3</td>
</tr>
<tr>
<td>CIS 5535 Public Information Systems Management</td>
<td>3</td>
</tr>
</tbody>
</table>

4. RESEARCH Area of Emphasis: Thesis Option (minimum of 9 credit hours)

<table>
<thead>
<tr>
<th>Course</th>
<th>Hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>CIS 5935 Introduction to Research</td>
<td>3</td>
</tr>
<tr>
<td>CIS 5970 Thesis</td>
<td>6</td>
</tr>
</tbody>
</table>

Elective Courses – The student must take at least 3 credit hours of elective graduate courses. These courses may be provided by other programs and must be taken with permission from CIS the Department. These courses broaden our students in preparation for employment or research.

As the program matures, it is expected that additional courses will be added to each area of emphasis, and that additional areas of interest will be defined.

There are two tracks leading to the M.S. in Cybersecurity:

Non-Thesis/Course-Based:
Cybersecurity Core (12 hours)
Two Areas of Emphasis (excluding Research area of emphasis) (18 hours).
Thesis/Research-Based:
   Cybersecurity Core (12 hours)
   Research Areas of Emphasis (9 hours)

Area of Emphasis 2 (9 hours)

D. Provide a sequenced course of study for all majors, concentrations, or areas of emphasis within the proposed program.

The program of study.

<table>
<thead>
<tr>
<th>Semester 1</th>
<th>Semester 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 hours Core Course</td>
<td>3 hours Core Course</td>
</tr>
<tr>
<td>3 hours Core Course</td>
<td>3 hours Emphasis Area Course</td>
</tr>
<tr>
<td>3 hours Emphasis Area Course</td>
<td>3 hours Emphasis Area Course</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Semester 2</th>
<th>Semester 4</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 hours Core Course</td>
<td>3 hours Emphasis Area Course</td>
</tr>
<tr>
<td>3 hours Emphasis Area Course</td>
<td>3 hours Emphasis Area Course</td>
</tr>
<tr>
<td>3 hours Emphasis Area Course</td>
<td>3 hours Emphasis Area Course</td>
</tr>
</tbody>
</table>

E. Provide a one- or two-sentence description of each required or elective course.

Course Descriptions

Course Name Provided: CIS 5370 COMPUTER SECURITY
Credit Hours: 3
Course Description: covers threats and attacks (such as computer viruses and trojan horses), access control, entity authentication, covert channels, inference and database security, secure operating systems, network security, legal and ethics aspects, administering security, physical security, and tempest

Web Link: https://flscns.fldoe.org/PbInstituteCourseDetails.aspx

Course Name: CIS 5371 CRYPTOGRAPHY
Course Description: this course is an introduction to modern cryptography for graduate students. various cryptographic tools like symmetric and public-key encryption schemes, signature schemes, message authentication schemes, identification protocols, and others are introduced. algorithms such as des, rsa, el gamal, and the digital signature standard will be covered

Web Link: https://flscns.fldoe.org/PbInstituteCourseDetails.aspx

Course Name Provided: CIS 6628 OFFENSIVE NETWORK SECURITY & VULNERABILITIES
Course Name within State System/Database: OFFENSIVE NETWORK SECURITY
Credit Hours: 3
Course Description: this course provides comprehensive coverage of fundamental problems, principles, and techniques in offensive network security and then commonly used tools for offensive network security with an emphasis on their principles and fundamental techniques.
additionally, it will also cover real world policy (legal) and implementation issues in network penetration testing.

**Course Name Provided:** COP 5614 Operating Systems  
**Credit Hours:** 3  
**Course Description:** provides a study of computer operating systems, which are the primary resource managers of computer hardwired. the main features provided by these operating systems such as process management, storage management, processor management, and auxiliary storage management are studied in detail. related topics of networking and security are introduced. case studies of comparison of representative commercial operating systems is included. laboratory use of the computer is an integral part of this course.

**Course Name Provided:** COP 5725 DATABASE MANAGEMENT SYSTEMS  
**Course Name within State System/Database:** PRINCIPLES OF DATABASE MANAGEMENT SYSTEMS  
**Credit Hours:** 2  
**Course Description:**  

**Course Name Provided:** CIS 5935 INTRODUCTION TO RESEARCH  
**Course Name Within State System/Database:** SPECIAL TOPICS/SEMINARS  
**Credit Hours:** 3  
**Course Description:** courses centering around topics of current interest or of special interest to students or instructors. topics or focus may vary from semester to semester. hours may vary. levels may vary within an institution.

**Course Name Provided:** CIS 5970 THESIS  
**Course Name Within State System/Database:** THESIS/THESIS DEFENSE  
**Credit Hours:** 3  
**Course Description:** hours taken by students to work on the thesis under the supervision of a major professor and a committee. hours may vary. levels may vary within an institution.

1. **AREA OF EMPHASIS: CYBER SECURITY I – NETWORKS**

**Course Name Provided:** CNT 5415 APPLIED COMPUTER NETWORK SECURITY  
**Course Name Within State System/Database:** APPLIED COMPUTER NETWORK SECURITY  
**Credit Hours:** 3  
**Course Description:** in this course, students will familiarize themselves with current and emerging threats to the security of computer systems and networks, including viruses, worms, and network intrusion, as well as with techniques for the prevention, detection, and recovery from such attacks, such as firewalls, intrusion detection systems, secure coding practices, and others. attack and defense mechanisms are studied in a systematic way to develop students' practical and analytical skills to identify, and correct or mitigate threats to computer systems and networks.

**Course Name Provided:** CIS 5396 CYBER-SECURITY FORENSICS  
**Course Name Within State System/Database:** CYBER-SECURITY FORENSICS  
**Credit Hours:** 3  
**Course Description:** provides a foundation in forensic evidence collection from electronic devices and the implications of security to users and forensic examiners. applicable laws; disk
and file recovery; bit-stream images; volatile and persistent data; cryptography; privacy and anonymity; tools for collecting evidence and reporting results. offered concurrently with cen 4xx4 (cyber-security forensics); graduate students will be assigned additional work. students cannot receive credit for cen 4xx4 and cen 5xx0.

Course Name Provided: CNT 5412 NETWORK SECURITY, ACTIVE & PASSIVE DEFENSES  
Course Name Within State System/Database: ACTIVE AND PASSIVE DEFENSES  
Credit Hours: 3  
Course Description: this course analyzes threats to computer networks, network vulnerabilities, techniques for strengthening passive defenses, tools for establishing an active network defense, and policies for enhancing forensic analysis of crimes and attacks on computer networks. topics include private and public key cryptography, digital signatures, secret sharing, security protocols, formal methods for analyzing network security, electronic mail security, firewalls, intrusion detection, internet privacy, and public key infrastructures.

2. AREA OF EMPHASIS: CYBER SECURITY II -- SOFTWARE

Course Name Provided: CEN 5074 SOFTWARE SECURITY  
Course Name Within State System/Database: SOFTWARE ASSURANCE AND SECURITY  
Credit Hours: 3  
Course Description: concepts and principles related to developing and maintaining secure software systems with no exploitable vulnerabilities with high levels of integrity and reliability.

Course Name Provided: CEN 5526 MOBILE COMPUTING SECURITY  
Course Name Within State System/Database: MOBILE COMPUTING  
Credit Hours: 3  
Course Description: this course will introduce students to the design, implementation, and analysis of mobile systems and applications in various domains, including urban sensing, mobile healthcare monitoring, security and privacy, location-aware services, and vehicular computing. integral to the course will be the course projects in which students develop mobile applications on mobile devices. through the course projects, students will gain hands-on experience on building mobile applications and validate their research ideas in practice.

Course Name Provided: CNT 6263 INTRO TO CYBER PHYSICAL SYSTEMS SECURITY  
Credit Hours: 3  
Course Description: (NEW) A Representative cyber-physical system (representative systems (e.g., smart grids, medical CPS, and smart cars). Taxonomy of threats, vulnerabilities, attacks and controls. Cyber-physical system components and features. Models of interaction and implications for design of security features.

3. AREA OF EMPHASIS: CYBER SECURITY III – POLICY & MANAGEMENT

Course Name Provided: ISS 5653 CYBER SECURITY POLICY AND AFFAIRS  
Course Name Within State System/Database: FUNDAMENTALS OF GLOBAL CYBERSECURITY POLICY  
Credit Hours: 3  
Course Description: provides a foundational understanding of the technical and non-technical considerations influencing global cybersecurity policy.

Course Name Provided: CIS 5535 PUBLIC INFORMATION SYSTEMS MANAGEMENT  
Course Name Within State System/Database: PRINCIPLES OF INFORMATION SECURITY  
Credit Hours: 3
Course Description: this course, provides an overview of information systems security principles, practices, methods, and tools for organizational and institutional computing. Students will also learn about the relationship between policy and security, the mechanisms used to implement policies, and the methodologies and technologies for assurance and vulnerability analysis and intrusion detection.

Course Name Provided: CNT 4416 CYBER WAR GAMING NEEDS
Course Name Within the Statewide System: CYBER WAR GAMING (U)
Credit Hours: 3
Course Description: every organization, whether part of the government or the private sector, needs battle-tested personnel in order to defend its networks against attack. The most effective way to provide this experience is to recreate the exact scenarios, no matter how nefarious, they will see in the real world. This course provides exercises that use different specialties (network, security, visualization, software, etc.) into color-coded red and blue teams that perform specific roles in attacking and defending infrastructures.

Course Name Provided: CNT 6519 WIRELESS NETWORK SECURITY
Course Name Within the Statewide System: WIRELESS SECURITY AND FORENSICS
Credit Hours: 3
Course Description: advanced topics in wireless network security, security management, cryptography, wireless forensics and related areas.

F. For degree programs in the science and technology disciplines, discuss how industry-driven competencies were identified and incorporated into the curriculum and indicate whether any industry advisory council exists to provide input for curriculum development and student assessment.

Requirements for cybersecurity education are defined by the NIST National Initiative for Cybersecurity Education (NICE) framework. These requirements do not distinguish between undergraduate and graduate programs.

G. For all programs, list the specialized accreditation agencies and learned societies that would be concerned with the proposed program. Will the university seek accreditation for the program if it is available? If not, why? Provide a brief timeline for seeking accreditation, if appropriate.

Although there is no applicable accrediting body for the proposed program, Florida A&M University will seek to be redesignated a National Center of Academic Excellence in Cyber Defense Research (CAE-R) by DHS and NSA. Designation requires meeting additional strict standard. The CAE-R designation review will be filed during 2023.

H. For doctoral programs, list the accreditation agencies and learned societies that would be concerned with corresponding bachelor’s or master’s programs associated with the proposed program. Are the programs accredited? If not, why?

This section is not applicable.
I. Briefly describe the anticipated delivery system for the proposed program (e.g., traditional delivery on main campus; traditional delivery at branch campuses or centers; or nontraditional delivery such as distance or distributed learning, self-paced instruction, or external degree programs). If the proposed delivery system will require specialized services or greater than normal financial support, include projected costs in Table 2 in Appendix A. Provide a narrative describing the feasibility of delivering the proposed program through collaboration with other universities, both public and private. Cite specific queries made of other institutions with respect to shared courses, distance/distributed learning technologies, and joint-use facilities for research or internships.

The proposed MSCyS program will be offered online and face-to-face. Initially, the majority of the delivery system will be the traditional in-person mode.

IX. Faculty Participation

A. Use Table 4 in Appendix A to identify existing and anticipated full-time (not visiting or adjunct) faculty who will participate in the proposed program through Year 5. Include (a) faculty code associated with the source of funding for the position; (b) name; (c) highest degree held; (d) academic discipline or specialization; (e) contract status (tenure, tenure-earning, or multi-year annual [MYA]); (f) contract length in months; and (g) percent of annual effort that will be directed toward the proposed program (instruction, advising, supervising internships and practica, and supervising thesis or dissertation hours).

Table 4 identifies graduate faculty who are credentialed to teach and direct research in the M.S. in Cybersecurity program. This program shares a common core of three courses required by the existing M.S. program in Computer Information Science. Consequently, nearly all graduate faculty participate in proposed program. Advanced courses are taught by faculty and adjuncts with significant training and experience in cybersecurity.

B. Use Table 2 in Appendix A to display the costs and associated funding resources for existing and anticipated full-time faculty (as identified in Table 4 in Appendix A). Costs for visiting and adjunct faculty should be included in the category of Other Personnel Services (OPS). Provide a narrative summarizing projected costs and funding sources.

Table 2 identifies projected costs of the program. In year one, most of the monies allocated to the program are from existing dollars from salaries of current faculty as identified in Table 4. Year One costs also include monies for administrative support, general operating expenses, graduate assistantships, and a percentage of new faculty salaries. By year five, the majority of funds will be allocated from a continuing E&G base of monies dedicated to faculty, staff, operating expenses and equipment.

C. Provide in the appendices the abbreviated curriculum vitae (CV) for each existing faculty member (do not include information for visiting or adjunct faculty).

See curriculum vitae in Appendix B.
D. Provide evidence that the academic unit(s) associated with this new degree have been productive in teaching, research, and service. Such evidence may include trends over time for average course load, FTE productivity, student HC in major or service courses, degrees granted, external funding attracted, as well as qualitative indicators of excellence.

Graduate faculty members are engaged in teaching, research and grant acquisition. Research includes directing M.S. thesis students to complete and publish their research. A primary indicator of excellence is the University designation as a National Center of Academic Excellence in Cyber Defense Education. Additional data related to faculty productivity are shown in the curriculum vitae in Appendix B.

X. Non-Faculty Resources

A. Describe library resources currently available to implement and/or sustain the proposed program through Year 5. Provide the total number of volumes and serials available in this discipline and related fields. List major journals that are available to the university’s students. Include a signed statement from the Library Director that this subsection and subsection B have been reviewed and approved.

The libraries at both FAMU and FSU are well-equipped with primary literature in the areas of engineering, basic science, mathematics, and liberal studies, and provide excellent support for our undergraduates. Annual purchases of books, based on recommendations of the faculty and the college library committee, ensure that the collections are maintained up to date. The Samuel H. Coleman Memorial Library at FAMU holds over 500,000 catalogued volumes, almost 6,000 serial subscriptions, 131,500 microfilms, and 73,000 non-print items. Furthermore, the library serves as a depository for extensive United States government publications. All topics related to engineering are housed at this library. Students also have access to many online journals.

The Library’s systems for locating and obtaining electronic information:

Access to licensed electronic resources is available to faculty, staff and students of Florida A&M University from the Libraries’ homepage. Users may access full text electronic resources from home or remote locations with the use of the fourteen (14) digit activated library card number, located on the bottom of the Rattler Card, Florida A&M’s ID card. The web-based and mobile version of the Online Catalog for the State University Libraries (SUL) of Florida is used to locate books, journals, newspapers, government publications, microform, and other resources. The catalog may be accessed at http://famu.catalog.fcla.edu.

The Library also provides access to ARTstor. This database contains 1.3+ million images in the arts, architecture, humanities, and sciences; 200+ collections from Asia Society, MoMA, Musee du Louvre; and multidisciplinary teaching ideas.

Computer Science Digital Content:

Other services relevant to the needs of the program:

Ask a Librarian:
This chat/email/text service is provided primarily for the faculty, staff and students of Florida A&M University. The electronic reference service is designed to provide answers to the same types of questions you might ask at the reference desk.

Distance Learning Library:
The University Libraries are active partners and participants in the Florida Distance Learning Library Initiative (DLLI), the Florida Center for Library Automation (FCLA), and in SUS library initiatives and joint agreements. These partnerships support research in Computer Science. The DLLI initiative ensures document delivery of resources between libraries in the state. The Reference and Referral Center, part of DLLI, is also available as a supplement to FAMU services to distance learners who are in need of assistance in locating resources. Through partnerships with the SUS and community college libraries, access to and reciprocal borrowing privileges are available to all SUS students. Many purchases of electronic databases, including those with full text, are made through SUS and FCLA licensing agreements. These databases are available to students through the online catalog, WebLUIS.

B. Describe additional library resources that are needed to implement and/or sustain the program through Year 5. Include projected costs of additional library resources in Table 2 in Appendix A. Please include the signature of the Library Director in Appendix B.

No additional library resources are needed to implement or sustain the proposed BS-Cybersecurity program.

C. Describe classroom, teaching laboratory, research laboratory, office, and other types of space that are necessary and currently available to implement the proposed program through Year 5.

Table E summarizes the existing facilities that are adequate during initial stages of this program. The CIS Department is assigned four classrooms, capable of supporting up to 72 classes per week; two classrooms can be reconfigured into labs.
Table E. Space and Facilities to Support Proposed Cybersecurity Program

<table>
<thead>
<tr>
<th>Utilization</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Classrooms</td>
<td>4</td>
</tr>
<tr>
<td>Teaching Labs</td>
<td>2</td>
</tr>
<tr>
<td>Research Labs</td>
<td>2</td>
</tr>
<tr>
<td>Faculty Offices</td>
<td>13</td>
</tr>
<tr>
<td>Student Offices/Areas</td>
<td>2</td>
</tr>
<tr>
<td>Storage Areas</td>
<td>2</td>
</tr>
</tbody>
</table>

Offices:

All regular faculty members (tenured, tenure track, instructor) have their own office for all job-related activities, such as conducting research, mentoring, and advising. Adjunct faculty may share offices if an office is available. Moreover, each faculty office is equipped with a PC (Personal Computer) with an Ethernet connection to the local Windows/UNIX LAN and Internet. Each faculty office is also equipped with a laser printer and a telephone. All faculty and staff are also assigned a notebook computer and/or a PC for use at home or on travel.

Administrative offices are configured identically to the faculty offices. Each staff member has a dedicated office space with Windows desktop, a laser printer and a telephone. All staff and faculty have access to two multi-function networked copiers/scanners/printers, and a color laser printer. All faculty, staff and graduate students also have access to the CIS Department conference room. The conference room contains a HP PC, Wall mounted 42” LCD display connected to either the PC or a notebook computer, and a Polycom 6000 video teleconferencing system.

Classrooms:

The CIS Department has four traditional classrooms used for instruction with a combined seating capacity for 140 students. These rooms can support up to 32 MWF and 24 TTh classes in a typical week. Although these classrooms are used primarily by the CIS Department, other departments use them when available. Total classroom utilization is above 70%. Each classroom contains a smart classroom podium with overhead projector and internet connectivity. In addition, there is the capability to connect the instructor’s laptop to the LCD projector. Two of the classrooms can also be used as teaching labs.

Laboratory Facilities:

There are five dedicated computer laboratories within the CIS Department. The Security Lab is an isolated environment for cybersecurity instruction and research. The Graduate Lab supports
research efforts of faculty members and graduate students. A third lab, partitioned into an open space and six locked cubicles, supports small student teams working on research or assigned projects.

The Teaching Lab and the Open Lab serve both as schedulable computer classroom environment for hands on instruction, and as open working space where students can complete classwork. All lab workstations access the departmental network resources and services on both Windows Server and the Sun Solaris (UNIX) based servers. The Teaching Lab is configured as a smart classroom with podium, audiovisual projection, and air media connectivity. The Open Lab consists of two wall mounted 55” LCD displays managed from the instructor podium. The Teaching and Open labs are open Monday through Thursday 8:00am – 8:00pm, and Friday 8:00am- 5:00 pm.

D. Describe additional classroom, teaching laboratory, research laboratory, office, and other space needed to implement and/or maintain the proposed program through Year 5. Include any projected Instruction and Research (I&R) costs of additional space in Table 2 in Appendix A. Do not include costs for new construction because that information should be provided in response to X (E) below.

NA

E. If a new capital expenditure for instructional or research space is required, indicate where this item appears on the university's fixed capital outlay priority list. Table 2 in Appendix A includes only Instruction and Research (I&R) costs. If non-I&R costs, such as indirect costs affecting libraries and student services, are expected to increase as a result of the program, describe and estimate those expenses in narrative form below. It is expected that high enrollment programs in particular would necessitate increased costs in non-I&R activities.

NA

F. Describe specialized equipment that is currently available to implement the proposed program through Year 5. Focus primarily on instructional and research requirements.

NA

G. Describe additional specialized equipment that will be needed to implement and/or sustain the proposed program through Year 5. Include projected costs of additional equipment in Table 2 in Appendix A.

Specialized labs are required to support research and teaching in cybersecurity, such as wireless networks and mobile computing, robotic and autonomous devices, social computing, etc. These labs use commercially available components configured to support research/teaching. The lab will enable students to configure physical networks, deploy applications, analyze characteristics such as performance, vulnerabilities and protection schemes. Specialized equipment such as network switches, routers and servers are required. The year one costs are $30,000, with an expected continuing cost of $20,000.

H. Describe any additional special categories of resources needed to implement the program through Year 5 (access to proprietary research facilities, specialized services, extended travel,
etc.). Include projected costs of special resources in Table 2 in Appendix A.

NA

I. Describe fellowships, scholarships, and graduate assistantships to be allocated to the proposed program through Year 5. Include the projected costs in Table 2 in Appendix A.

One graduate assistantship with tuition waiver ($30,000, annually) will be requested in year one, and two by year five. These students will support faculty instruction and research.

J. Describe currently available sites for internship and practicum experiences, if appropriate to the program. Describe plans to seek additional sites in Years 1 through 5.

There is no required internship or practicum experience.
## APPENDIX A

### Table 1-B: Projected Headcount from Potential Sources

<table>
<thead>
<tr>
<th>Source of Students</th>
<th>Non-duplicated headcount in any given year</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Individuals drawn from agencies/industries in your service area (e.g., older returning students)</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1</td>
<td>3</td>
<td>1.5</td>
</tr>
<tr>
<td>Students who transfer from other graduate programs within the university**</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0.75</td>
<td>1</td>
<td>0.75</td>
</tr>
<tr>
<td>Individuals who have recently graduated from preceding degree programs at this university**</td>
<td>3</td>
<td>2.25</td>
<td>5</td>
<td>3.75</td>
<td>5</td>
<td>3.75</td>
</tr>
<tr>
<td>Individuals who graduated from preceding degree programs at other Florida public universities</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>1.5</td>
<td>3</td>
<td>2.25</td>
</tr>
<tr>
<td>Individuals who graduated from preceding degree programs at non-public Florida institutions</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>2.25</td>
<td>3</td>
<td>2.25</td>
</tr>
<tr>
<td>Additional in-state residents***</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Additional out-of-state residents***</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0.75</td>
<td>2</td>
<td>1.5</td>
</tr>
<tr>
<td>Additional foreign residents***</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other (Explain)***</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>3</td>
<td>2.25</td>
<td>14</td>
<td>10</td>
<td>17</td>
<td>12</td>
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</table>

### Table 2: Projected Costs and Funding Sources

<table>
<thead>
<tr>
<th>Interaction &amp; Research Costs (post-consulting)</th>
<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Residential Base** (EAC)</td>
<td>95,104</td>
<td>42,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Endowment Growth (EAC)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>New Non-Recurring (EAC)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Non-Recurring &amp; Grants (EAC)</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Philanthropy/Endowments</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Enterprise Auxiliary Funds</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>95,104</td>
<td>42,000</td>
<td>0</td>
<td>0</td>
<td>0</td>
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</tbody>
</table>

**Note:** The table for Table 2 is not fully visible in the image provided.
Table 3: Anticipated Reallocation of Education and General Funds

<table>
<thead>
<tr>
<th>Program and/or E&amp;G account from which current funds will be reallocated during Year 1</th>
<th>Base before reallocation</th>
<th>Amount to be reallocated</th>
<th>Base after reallocation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>257,104</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Totals</td>
<td>$0</td>
<td>$257,104</td>
<td>$0</td>
</tr>
</tbody>
</table>
## APPENDIX A

### TABLE 4

<table>
<thead>
<tr>
<th>Faculty Code</th>
<th>Faculty Name or &quot;New Hire&quot;</th>
<th>Highest Degree Held</th>
<th>Academic Discipline or Specialty</th>
<th>Rank</th>
<th>Contract Status</th>
<th>Initial Date for Participation in Program</th>
<th>Mos. Contract Year 1</th>
<th>FTE Year 1</th>
<th>% Effort for Prg. Year 1</th>
<th>PY Year 1</th>
<th>Mos. Contract Year 5</th>
<th>FTE Year 5</th>
<th>% Effort for Prg. Year 5</th>
<th>PY Year 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>Hongmei Chi, Ph.D.</td>
<td></td>
<td>Computer Science</td>
<td>Professor</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.30</td>
<td>0.23</td>
<td>9</td>
<td>0.75</td>
<td>0.40</td>
<td>0.30</td>
</tr>
<tr>
<td>A</td>
<td>Bobby Caneville, Ph.D.</td>
<td></td>
<td>Computer Science</td>
<td>Assoc. Prof.</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.10</td>
<td>0.08</td>
<td>9</td>
<td>0.75</td>
<td>0.10</td>
<td>0.08</td>
</tr>
<tr>
<td>A</td>
<td>Edward L. Jones, Ph.D.</td>
<td></td>
<td>Computer Science</td>
<td>Professor</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.10</td>
<td>0.08</td>
<td>9</td>
<td>0.75</td>
<td>0.20</td>
<td>0.15</td>
</tr>
<tr>
<td>A</td>
<td>Bhunu Prasad, Ph.D.</td>
<td></td>
<td>Computer Science</td>
<td>Professor</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.10</td>
<td>0.08</td>
<td>9</td>
<td>0.75</td>
<td>0.10</td>
<td>0.08</td>
</tr>
<tr>
<td>A</td>
<td>Clement S. Allen, Ph.D.</td>
<td></td>
<td>Computer Science</td>
<td>Professor</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.20</td>
<td>0.15</td>
<td>9</td>
<td>0.75</td>
<td>0.30</td>
<td>0.23</td>
</tr>
<tr>
<td>A</td>
<td>Delitte Evans, Ph.D.</td>
<td></td>
<td>Computer Science</td>
<td>Assoc. Prof.</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.10</td>
<td>0.08</td>
<td>9</td>
<td>0.75</td>
<td>0.10</td>
<td>0.08</td>
</tr>
<tr>
<td>B</td>
<td>New Hire 1</td>
<td></td>
<td>Electrical Engineering</td>
<td>Asst. Prof.</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.30</td>
<td>0.23</td>
<td>9</td>
<td>0.75</td>
<td>0.40</td>
<td>0.30</td>
</tr>
<tr>
<td>B</td>
<td>New Hire 2</td>
<td></td>
<td>Computer Science</td>
<td>Asst. Prof.</td>
<td>Tenure</td>
<td>Fall 2019</td>
<td>9</td>
<td>0.75</td>
<td>0.30</td>
<td>0.23</td>
<td>9</td>
<td>0.75</td>
<td>0.40</td>
<td>0.30</td>
</tr>
<tr>
<td>B</td>
<td>New Hire 3</td>
<td></td>
<td>Computer Science</td>
<td>Asst. Prof.</td>
<td>Tenure</td>
<td>Fall 2025</td>
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<td>0.00</td>
<td>0.20</td>
<td>0.00</td>
<td>9</td>
<td>0.75</td>
<td>0.20</td>
<td>0.15</td>
</tr>
</tbody>
</table>

**Total Person-Years (PY):**

|                      | 1.50 | 1.13 | 6.00 | 2.00 | 1.30 |

<table>
<thead>
<tr>
<th>Faculty Code</th>
<th>Source of Funding</th>
<th>PY Workload by Budget Classification</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Year 1</td>
</tr>
<tr>
<td>A</td>
<td>Existing faculty on a regular line</td>
<td>Current Education &amp; General Revenue</td>
</tr>
<tr>
<td>B</td>
<td>New faculty to be hired on a vacant line</td>
<td>Current Education &amp; General Revenue</td>
</tr>
<tr>
<td>C</td>
<td>New faculty to be hired on a new line</td>
<td>New Education &amp; General Revenue</td>
</tr>
<tr>
<td>D</td>
<td>Existing faculty hired on contracts/ grants</td>
<td>Contracts/Grants</td>
</tr>
<tr>
<td>E</td>
<td>New faculty to be hired on contracts/ grants</td>
<td>Contracts/Grants</td>
</tr>
</tbody>
</table>

**Overall Totals for:** Year 1: 1.13 Year 5: 1.30
APPENDIX B

Please include the signature of the Equal Opportunity Officer and the Library Director.

______________________________  ______________________________
Signature of Equal Opportunity  Date
Officer

______________________________  ______________________________
Signature of Library Director    Date

This appendix was created to facilitate the collection of signatures in support of the proposal. Signatures in this section illustrate that the Equal Opportunity Officer has reviewed section II.E of the proposal and the Library Director has reviewed sections X.A and X.B.
APPENDIX C – FACULTY VITAE
CURRICULUM VITAE

1. Name: Clement Allen

2. Education:
   Ph.D., Computer and Information Sciences, University of Alabama-Birmingham, 1995
   M. S., Computer Science, Howard University, 1988

3. Academic experience:
   Department of Computer and Information Sciences, Florida A&M University (FAMU), Associate Professor (2000-present), fulltime
   Department of CIS, FAMU, Assistant Professor (1995-2000), fulltime

4. Non-academic experience:
   AT&T Bell Laboratories, Member of Technical Staff, (1987-1990)

5. Certifications or professional registrations: none

6. Current membership in professional organizations:
   Membership in Association for Computing Machinery (ACM)

7. Honors and awards:
   Title: Holistic Model for Minority Education and Research Source: NSF/CO-PI
   Award Period Covered: 10/01/04 – 09/01/09 Amount: $138,000

   Title: Development of an Ambient Computing Laboratory Source: NSF/PI
   Award Period Covered: 04/01/06 – 05/01/08 Amount: $1,000,000

   Title: Minority Innovation Challenges Institute Source: NASA/PI
   Award Period Covered: 09/01/09 – 08/30/12 Amount: $1,200,000

   Title: Advancing Robotics Technology for Societal Impact Source: NSF/CO-PI
   Award Period Covered: 09/01/10 – 08/31/12 Amount: $24,000

8. Service activities:
   CIS/FAMU Tenure and Promotion Committee, Chair (2005—present)
   College of Arts and Sciences/FAMU Tenure and Promotion Committee, Member (2005—2011)
   College of Arts and Sciences/FAMU Grievance Committee, Member (2005—2011)

9. Most important publications and presentations from the past five years:
   Williams, A., Touretzky, D., Thompson-Tira, E., Manning, L., Boonthum, C., Allen, C.,

10. Most recent professional development activities:
Curriculum Vitae

1. Name: Hongmei Chi

2. Education:
   Ph.D., Computer and Information Science, Florida State University, 2004
   M. S., Computer Science, Dalian University of Technology, 1992

3. Academic experience:
   Department of Computer and Information Sciences (CIS), Florida A&M University (FAMU), Associate Professor (2012-tilldate), fulltime
   Department of CIS, FAMU, Assistant Professor (2006-2012), fulltime
   Department of CIS, FAMU, Visiting Assistant Professor (2004-2006), fulltime

4. Non-academic experience:
   Florida State University, (2001-2004), Teaching assistant, part-time
   Developer for SPN RG (http://sprng.cs.fsu.edu) and
   MIGRATE http://popgen.sc.fsu.edu/Migrate/Migrate-n.html (2001--2006), part-time

5. Certifications or professional registrations:

6. Current membership in professional organizations:
   Membership in the American Statistical Association (ASA)
   Membership in Association for Computing Machinery (ACM)

7. Honors and awards:
   Invited speaker, NSF SFS Workshop at FIU, July 5-11, 2012, Miami, FL

   Title: Comprehensive Preparation for Future Nuclear Scientists and Engineers
   Award Period Covered: 09/28/12 – 9/27/16
   Source: NRC/Co-PI
   Amount: $400,000

   Title: Efficient Numerical Methods for SPDE
   Award Period Covered: 07/01/12 – 6/30/15
   Source: AFOSR/PI
   Amount: $300,000

   Title: Computation for STEM Education
   Award Period Covered: 09/01/09 – 9/30/13
   Source: Department of Education/PI
   Amount: $600,000

8. Service activities:
   CIS/FAMU Computer Science Coordinator (2011—present)
   CIS/FAMU Information Technology Coordinator (2008—2011)
   University Curriculum Committee members (2009—2012)

9. Most important publications and presentations from the past five years:

   H. Chi, E. L. Jones, L. P. Grandham: Enhancing Mentoring Between Alumni and


10. Most recent professional development activities:

SURA IT Scientific Visualization Workshop, March 30, 2012, Tallahassee, FL.

NCWIT Summit 2010 and 2012-- Learn about leading-edge research and ideas for recruiting, retaining, and raising awareness about women in Information technology


Teaching Computing to STEM Students via Visualization Tools, Paper Presentation, ICCS 2011, June 1-3, 2011, Singapore.

IA at FAMU: Broadening IA Awareness & Competency, 6th Annual Information Assurance Symposium, February 8, 2011, Hampton, VA

Curriculum Vitae

1. Name: **Deidre W. Evans**

2. Education:
   - Ph.D., Electrical Engineering, Georgia Institute of Technology, 1994
   - MSEE, Electrical Engineering, Georgia Institute of Technology, 1990
   - BEE, Electrical Engineering, Georgia Institute of Technology, 1988
   - BS, Computer Science, Spelman College, 1988
   - 18 graduate hours in Software Engineering Science (Florida A&M University)

3. Academic experience:
   - Department of Computer and Information Sciences, Florida A&M University, Tenured Associate Professor (2002-present), fulltime
   - Department of Computer and Information Sciences, Florida A&M University, Tenured Associate Professor & Associate Chairperson (1999-2002), fulltime
   - Department of Computer and Information Sciences, Florida A&M University, Assistant Professor & Associate Chairperson (1998-1999), fulltime
   - Department of Computer and Information Sciences, Florida A&M University, Assistant Professor (1994-1998), fulltime
   - Physics Department, Morehouse College, Adjunct Instructor, (1990-1992), part-time.

4. Non-academic experience:

5. Certifications or professional registrations:

6. Current membership in professional organizations:

7. Honors and awards:

8. Service activities:
   - National Science Foundation Advisory Committee for Cyberinfrastructure (2012-2016)

9. Most important publications and presentations from the past five years:

10. Most recent professional development activities:
Curriculum Vitae

1. Name: Bobby Granville

2. Education:
   - Ph.D. Computer Science Florida State University 89-98
   - M.S. Computer Science Georgia Institute of Technology 72-75
   - B.S. Mathematics Morris Brown College 67-70

3. Academic experience:
   - Department of Computer and Information Sciences (CIS), Florida A&M University (FAMU), Associate Professor (2004-), fulltime
   - Department of CIS, FAMU, Assistant Professor (1995-2004), fulltime
   - Department of CIS, FAMU Visiting Instructor (1992 - 1993)

4. Non-academic experience
   - Sperry Corp. (Unisys / Univac), Senior Software Engineer, (1979 - 1987)
     Defense Products Group, Clearwater, Florida 33518
     Responsibilities as Software Engineer included developing computer software/firmware support systems; preparing the required MIL specification documents; coordinating Engineering efforts in Software Acceptance Test Procedures; providing planning & technical logistics support in customer Design Reviews; and producing Job Cost Analysis with Quotation estimates for the described tasks; scheduling & engineering software cost/man-hour computations.
   - Southern Bell (Bell South) Telephone Co., Computer Systems Analyst, (1971 - 1979)
     Headquarters Interdepartmental R & D, Atlanta, Georgia 30301
     Duties were to develop those automated application systems which spanned across multiple departments boundaries. This included planning, designing, coding, documenting, and testing of new computer application systems. Computer programs were developed to automate three systems in particular, the Automatic Intercept System Network, Non-Published Number System Network, and Centralized Service Observance Network. These systems were applicable over a five-state area. Each system interfaces with the company’s Service Order Network and AT&T Bell Lab’s Automatic Number Identification System.

5. Certifications or professional registrations
   - Collaborative Institutional Training Initiative (CITI), Principal Investigator – Responsible Conduct in Research Curriculum, (July 2012)

6. Current membership in professional organizations
   - Member, Upsilon Pi Epsilon (National Computer Science Honor Society) - FSU Chapter
7. Honors and awards
   • Accreditation Recognition for Outstanding Contribution (2008-2012).
   • Assessment Training and Research Institute Recognition (May 21-23, 2009)
   • Delores Auzzane Fellow (1991 & 1992)
   • Upsilon Pi Epsilon (National Computer Science Honor Society, - FSU Chapter), (Spring, 1992)
   • FGAMP Fellow (1993-1994)
   • McKnight Doctoral Fellow (1987 – 1990)
   • NASA Faculty Fellow, Jet Propulsion Laboratory, Pasadena, CA, (Summer 2002)

8. Service activities (within and outside of the institution)
   • CPATH-II Learning Research Grant, Auburn University (2010-2012)
   • Special Session Chair, Journal of Intelligent Systems, (2011).
   • CIS Department Level Assessment Coordinator, FAMU (2006- )
   • CIS Quality Assurance Committee Chair & Coordinator of Service Courses (2002- )
   • Organizing Committee member for The MULTICONF co-sponsored by the International Society for Research in Science and Technology (ISRST) (2007-2010)
   • Program Committee Co-Chair, Enterprise Information Systems and Web Technologies at The MULTICONF of EISWT-07, EISWT-08, EISWT-09, and EISWT-10,
   • Session Chair on Fuzzy Relational Systems, The 3rd Indian International Conference on Artificial Intelligence (IICAI-07), Pune, India, (Dec 17-19, 2007)

9. Briefly list the most important publications and presentations from the past five years – title, co-authors if any, where published and/or presented, date of publication or presentation
   • Studio Based Research Results Presentation, Coeur’d’Alene, Idaho (June 19-22, 2011)
   • SACS Commission on Colleges, Conference Roundtable Presentation, “Assessment in Graduate Programs”, Atlanta (2009)
   • Assessment Presentation, Assessment Training and Research Institute (May 21-23, 2009)

10. Briefly list the most recent professional development activities
    • Digital Media Learning Workshop, UNCF, MacArthur Foundation, Atlanta (2011)
    • Studio-Based Faculty Development Workshop, Coeur’d’Alene, Idaho (June 19-22, 2011)
    • MyItLab (Learning Management System) Workshop, Weston, Florida (May 13-14, 2011)
    • Assessment Training and Research Institute (ATARI), (2009 and 2010)
    • NSF Grant Writing Workshop, Washington, D.C. (2010)
    • FAMU Annual University Teaching Improvement Workshops
CURRICULUM VITAE

1. Name: Edward L. Jones

2. Education:
   Ph.D., Computer Science, University of North Carolina at Chapel Hill, 1984.
   M.S., Computer Science, Cornell University.
   B.S., summa cum laude, Mathematics, Johnson C. Smith University, 1972.

3. Academic experience:
   Department of Computer and Information Sciences (CIS), Florida A&M University (FAMU), Associate/Professor and Chair (2001-2012), full time.
   FAMU CIS Department, Associate Professor (1998-2001), full time.
   Department of Mathematics and Computer Science, Winston-Salem State University, Assistant/Associate Professor (1981-1985), full time.
   Florida Tech, Graduate Adjunct Faculty (1989-1994), part time.

4. Non-academic experience:
   IBM Corporation, Research Triangle Park NC, Summer Intern (1979), part time.

5. Certifications or professional registrations: none.

6. Current membership in professional organizations:
   Association for Computing Machinery

7. Honors and awards:

8. Service activities:
   FAMU Faculty Senator (2008-2012)
   FAMU Student Technology Fee Committee (2009-present)
   Director, Florida A&M University Center for Secure Computing and Information Assurance (2009-2012).
Board Member, ECHO Ministries, Tallahassee, Florida (2008-2010).
Board Member, Association of Computer/Information Sciences and Engineering Departments at Minority Institutions (ADMI), 2003-2006, 2009-11.

9. Most important publications and presentations from the past five years:
Mehdi Jazayeri, Edward L. Jones, and Gail Murphy, “Panel: Innovative Approaches to the CS1/CS2 Sequence,” Software Engineering Educators Symposium (SEES), November 8, 2010, Santa Fe, New Mexico, US.

Peter Clarke, Tariq King, Edward Jones, and Andrew Allen, “Using a web-based repository to integrate testing tools into programming courses,” SPLASH Educators’ and Trainers’ Symposium, October 17-21, 2010, Reno/Nevada, USA, 193-200.


10. Most recent professional development activities:
Software Engineering Educators Symposium (SEES), November 8, 2010, Santa Fe, New Mexico, US.

Workshop on Integrating Software Testing into Programming Courses (WISTPC 09), held at Florida International University, Miami, Florida, March 16-17, 2009, with Peter Clarke of FIU. Funded through NSF award #0736771, Edward Jones, PI.

2008 Computing Research Association (CRA) Travel Grant for CRA Computer Science Chairs Meeting, July 13-15, 2008, Snowbird, Utah, valued at $1500
Curriculum Vitae

1. Name: **Bhanu Prasad**

2. Education:
   Ph.D., Computer Science and Engineering, Indian Institute of Technology Madras, 1998
   Master of Technology, Computer Science and Technology, Andhra University, 1990

3. Academic experience:
   Department of Computer and Information Sciences (CIS), Florida A&M University (FAMU), Associate Professor and Chair (2012-till date), fulltime
   Department of CIS, FAMU, Associate Professor (2009-till date), fulltime
   Department of CIS, FAMU, Assistant Professor (2003-2009), fulltime
   School of Computer and Information Sciences, Georgia Southwestern State University, Assistant Professor (2000-2003), fulltime.

4. Non-academic experience:
   Hyperion Solutions Corporation, Associate Software Engineer. Research, design and development of software (1999-2000), fulltime
   Infosys Technologies, Software Consultant. Training and research in software (1998-1999), fulltime

5. Certifications or professional registrations:
   Rational Rose certificate from Rational Software Corporation, 1999
   Rational Unified Process certificate from Rational Software Corporation, 1999
   Hyperion Essbase Introduction certificate from Hyperion Solutions Corporation, 1999

6. Current membership in professional organizations:
   International Association for Technology Research, India

7. Honors and awards:
   Keynote speaker, International Conference on Communication and Computing Technologies, February 2011, India
   Keynote speaker, First International Conference on Information Systems and Software Engineering, December 2009, India

8. Service activities:
   Student mentor at WT Moore Elementary School, Tallahassee, Florida, 2009-2012
   Webmaster, Arvah Branch Home Owners Association (non-profit), 2009-till date
   Member of the Executive Advisory Committee, Department of Mathematics and Computer Science, Grambling State University, Grambling, Since 2005
   Search Committee Member, Computer Support Analyst, Department of CIS, FAMU, 2011.
   External Examiner for the Ph.D. dissertation on “Classification and feature Selection
Algorithms for DNA Sequence, Protein Sequence, and Gene Expression Data”, Jadavpur University, Kolkata, January 2011.

9. Most important publications and presentations from the past five years:
   A Parallel Approach for Solving a Large-Scale Traveling Salesman Problem, R. Bazylevych, R. Dupas, B. Kuz, R. Kutelmak, L. Bazylevych, Proceedings of the Fifth Indian International Conference on Artificial Intelligence, Tumkur, India, December 14-16, 2011
   Mining Multiple Large Data Sources, A. Adhikari, P.R. Rao, J. Adhikari, International Arab Journal of Information Technology, 7(3), July 2010
   Test Case Prioritization for Regression Testing, P.R. Srivastava, Proceedings of the International Conference on Software Engineering Theory and Practice, Orlando, USA, July 12-14, 2010

10. Most recent professional development activities:
   Program Committee Member, 8th International Conference on Services Computing, USA, July 2011
   Program Committee Co-Chair, 5th Indian International Conference on Artificial Intelligence, India, December 2011
   Program Committee Member, Canadian Conference on Artificial Intelligence, Canada, May 2011
   Program Committee Member, 5th International KES Conference on Agents and Multi-agent Systems –Technologies and Applications, UK, June 2011
   Program Committee Member, 4th International Conference on Computational Collective Intelligence Technologies and Applications, Vietnam, November 2012.
Curriculum Vitae

1. Name: Edwina Jacobs

2. Education:
   MS, Software Engineering Science, Florida A & M University, 2015
   BS, Computer Information Systems, Florida A & M University, 2008

3. Academic experience:
   Department of Computer and Information Sciences, Florida A&M University, Instructor, (2017 – present ), fulltime
   Department of Computer and Information Sciences, Florida A&M University, Visiting Instructor, (2016 – 2017), fulltime

4. Non-academic experience:

5. Certifications or professional registrations:

6. Current membership in professional organizations:

7. Honors and awards:

8. Service activities (within and outside of the institution):
   Faculty Advisor, Secured Rattler Clube (2016 – present)
   Content Manager, CIS Website (2016 – present)
   Content Manager, Center for Cyber Security (2016 – present)

9. Briefly list the most important publications and presentations from the past five years – title, co-authors if any, where published and/or presented, date of publication or presentation:

10. Briefly list the most recent professional development activities:
Curriculum Vitae

1. Name: Jon deGoicoechea

2. Education
   PhD Coursework-Information Assurance and Security, Capella University, 2012-2018
   Masters of Information Technology, American Intercontinental University, 2001
   Bachelor of Science, Corrections/Psychology, Jacksonville State University, 1981

3. Academic experience:
   • Department of Computer Information Systems, Florida A&M University, Instructor, full time, 2017-Present
   • Department of Information Technology, Keiser University, Instructor/Online Liaison, full time, 2014-2017
   • Department of Computer Science, Lake-Sumter State College, Interim Computer Science Instructor, full time, 2013-2013
     Online Adjunct Instructor, part time, 2016-2018
   • Information Technology Program, Fortis College, Program Director (Chairperson), full time, 2007-2013
   • Department of Computer Science, Jones College, Lead Adjunct Instructor/Online Instructor, part time, 2002-2010

4. Non-academic experience:
   • WeAreTeKz, Owner/Technician, part time, 2001-2014
   • The Bombay Company, Assistant Manager, full time, 1998-2004
   • Foundation for Learning, Program Coordinator, full time, 1998-1999
   • CarTempUSA, Car Rental Assistant Manager, full time, 1997-1998
   • Tri-Lambda Cleaning Services, Owner, part time, 1996-1998
   • Gordon’s Jewelers, Sales Person, part time, 1994-1996
   • State of Florida, Senior Children, Youth, and Family Counselor, full time, 1991-1996
   • Pricor, Inc., Juvenile Detention Center Program Coordinator/Counselor, full time, 1989-1991
   • Century 21 AAA Realty, Real Estate Agent, part time, 1986-1987
   • Calhoun-Cleburne Mental Health Board, Community Program Coordinator, full time, 1982-1989

5. Certifications or professional registrations
   • A+ #COMP001006317739
   • Network+ #COMP001006317739
   • Security+ #COMP001006317739
   • MCTS-Vista #sr-4985863

6. Current membership in professional organizations
   Institute of Electrical and Electronic Engineers (IEEE)
   Association for Computing Machinery (ACM)
7. Honors and awards
   Not Applicable

8. Service activities (within and outside of the institution)
   Faculty Advisor-Secured Rattlers
   Department Quality Team Member

9. Briefly list the most important publications and presentations from the past five years –
   title, co-authors if any, where published and/or presented, date of publication or
   presentation
   Not Applicable

10. Briefly list the most recent professional development activities: Continuing Education
    Courses
    - Digital Forensics, Charles Sturt University, Waga Waga, Australia
    - Cybersecurity Management, Charles Sturt University, Waga Waga, Australia
    - Introduction to Business Analysis, Charles Sturt University, Waga Waga, Australia
    - Internet of Things: How did we get here? University of California, San Diego on
      Coursera.com
    - Introduction to Big Data by University of California, San Diego on Coursera.com
Curriculum Vitae

1. Name: Vanessa Coote

2. Education –
   Master’s of Science, Computer Information Systems, Florida Institute of Technology, 2012
   Bachelor of Science, Information Technology, University of Belize, 2010

3. Academic experience –
   Florida A&M University, Instructor, 2018 – present, Full Time

4. Non-academic experience –
   USSI Global, Full Stack Developer, Design, develop and implement web-based applications. 2013 – 2018, full time

5. Certifications or professional registrations

6. Current membership in professional organizations

7. Honors and awards
   Phi Kappa Phi Honor Society

8. Service activities (within and outside of the institution)

9. Briefly list the most important publications and presentations from the past five years –
   title, co-authors if any, where published and/or presented, date of publication or presentation

10. Briefly list the most recent professional development activities
Subject: Request for Leave Without Pay – Rhoda Cato

Proposed Board Action: In accordance with BOT Policy Number 2005-21, the University will consider requests for unpaid leave of absence from regular employees who have at least one year of continuous service. The University grants leave of absence for the following reasons: parental, medical, educational, military service, and personal.

Attachments: No
Subject: Academic Calendar 2020-2021

Proposed Board Action: The academic calendar for 2020-2021 are being presented to the Board of Trustees for approval, in accordance with Florida Board of Education Rule 6A-10.019. Additionally, the Board of Governors Regulation 8.001 requires each university to adopt an annual calendar which includes the beginning and ending dates for each semester, the dates for final examinations, and the dates for the issuance of diplomas.

Please note that the beginning and ending dates of each semester, the holidays, and the breaks have been agreed upon by the Calendar Committee, which includes representatives from Florida A&M University, Florida State University, and Tallahassee Community College. The Calendar Committee meets annually to coordinate the calendars of the three educational institutions in Tallahassee.

Attachments: Yes
  1. Academic Calendar for 2020-2021
# ACADEMIC CALENDAR: 2020 - 2021

1. Please complete academic class and finals date information below:

<table>
<thead>
<tr>
<th>Semester</th>
<th>Beginning Date of Classes</th>
<th>Last Day of Classes</th>
<th>Finals</th>
<th># of Class Instruction Days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fall 2020</td>
<td>08/24/2020</td>
<td>12/04/2020</td>
<td>December 7 - 11, 2020</td>
<td>76</td>
</tr>
<tr>
<td>Spring 2021</td>
<td>01/06/2021</td>
<td>04/23/2021</td>
<td>April 26 - 30, 2021</td>
<td>76</td>
</tr>
<tr>
<td>Summer 2021 – Term 1 (C)</td>
<td>05/10/2021</td>
<td>07/29/2021</td>
<td>July 29 - 30, 2021</td>
<td>58</td>
</tr>
<tr>
<td>Summer 2021 – Term 2 (A)</td>
<td>05/10/2021</td>
<td>06/17/2021</td>
<td>June 17 - 18, 2021</td>
<td>29</td>
</tr>
<tr>
<td>Summer 2021 – Term 3 (B)</td>
<td>06/21/2021</td>
<td>07/29/2021</td>
<td>July 29 - 30, 2021</td>
<td>29</td>
</tr>
</tbody>
</table>

2. Does Fall Semester 2020 begin during the first three weekdays after August 22?
   - Yes [X]  
   - No [ ]

3. Does Spring Semester 2021 begin during the first three weekdays after January 4?
   - Yes [X]  
   - No [ ]

4. Does Summer Semester 2021 begin during the first three weekdays after May 5?
   - Yes [x]  
   - No [ ]

5. Does the year-round calendar provide 220 days of classroom instruction including examinations or 210 days of instruction excluding examinations?
   - Yes [X]  
   - No [ ]

If you answered no to question 2-4, please provide a request for exemption to Rule 6A-10.019 with your justification. Please note that you have worked with your area high schools and community colleges in order to insure smooth transition.

*Note: FAMU has worked to align with area high schools, Florida State University, and Tallahassee Community College.*
Subject: Tenure Upon Appointment – Idongesit Mkpong-Ruffin

Proposed Board Action: In accordance with Article 15.8, Collective Bargaining Agreement (2014 – 2017), “Tenure may be granted to a faculty member by the Board at the time of initial appointment, upon recommendation of the appropriate administrator. The administrator shall consider the recommendation of the department or equivalent unit prior to making his/her final tenure recommendation.”

Tenure Upon Appointment is a condition of employment that is offered to a faculty member who has previously held a tenured position. Requests for Tenure Upon Appointment are approved by the Provost and President. The documentation has been reviewed by the university-wide tenure and promotion committee and the school/college tenure and promotion committee.

Attachments: Yes
   1. Curriculum Vita for Dr. Idongesit Mkpong-Ruffin
IDONGESIT MKPONG-RUFFIN

Curriculum Vitae

Department of Computer and Information Science
Florida Agricultural and Mechanical University
(850) 412-7350

4440 Chrystan Rd.
Montgomery, AL 36109
(334) 467-6461
idongesit.ruffin@famu.edu

EDUCATION

PhD., Computer Science & Software Engineering, AUBURN UNIVERSITY, Auburn, AL
Dissertation Advisor – David Umphress - May 2009

M.S. Computer and Information Science, TROY UNIVERSITY – Montgomery Campus,
Montgomery, AL August 2007

M.B.A. TENNESSEE STATE UNIVERSITY, Nashville, TN
May 1992

B.S. CIS, FREED-HARDEMAN COLLEGE, Henderson, TN
August 1985

TEACHING EXPERIENCE

FLORIDA A&M UNIVERSITY, Tallahassee, FL
Associate Professor, Computer and Information Science Department – Aug 2019 – Present
• Teaching computer science courses as needed
  • COP 3366 – Introduction to C#
  • CIS 4942 - Internship

FAULKNER UNIVERSITY, Montgomery, AL
Professor, Computer Science Department – Aug. 2018 – July 2019

Professor, Chair, Computer Science Department – Aug. 2007 – July 2018

Associate Professor, Chair, Computer Science Department – Aug. 2007 – May 2010
Alabama Christian College of Arts and Sciences
• Taught computer science courses as needed
  • CS/CSIS 4390 – Computer Science Seminar
  • CS 4360 – Software Engineering
  • CS 4380 – Internship/Project
  • CS/CSIS 3389 – Secure Software Development
  • CS 3360 – User Interface Design
  • CS 3340 – Operating Systems
  • CS 2305 – Introduction to Computer Science Programming Using C++
  • CS 2310 – Fundamental Mathematical Structures for Computer Science
  • CS 2345 – Computer Organization
  • CS 2350 – Introduction to Database Concepts
  • CS/CSIS 1305 – Computer Programming I – (Java)
  • CS/CSIS 1306 – Computer Programming II – (Java)
  • CS/CSIS 2376 – Introduction to Visual Programming (Java)
• INF 4310 – Evaluation of Information-Web Engineering
• INF 4390 – Seminar in Informatics
• FE 1100 – Freshman Experience

AUBURN UNIVERSITY, Auburn, AL
Graduate Assistance in Areas of National Need (GAANN) Fellow Aug 2005 – May 2006
• Guest Lecturer & Teaching Assistant – COMP 6120 – Database Systems – Fall 2005
• Instructor – COMP 1000 – Computer Applications – Spring 2006

TROY UNIVERSITY MONTGOMERY CAMPUS, Montgomery, AL
Instructor – Computer Science Department – Aug 2002 – Aug 2004
• Taught Computer Science courses as directed
  • CIS 3312 - Discrete Mathematics,
  • CIS 2244 & CIS 2260 Computer Science 1 & II ;
  • CIS 2261-Foundations in Computer Science;
  • CIS -3325 - Operations Research;
  • CIS 3366-Social and Ethical Issues in Computing;

FAULKNER UNIVERSITY, Montgomery, AL
Assistant Professor, College of Business - Aug 1998 - May 2002
• Developed curriculum and taught Computer Information Systems Classes:
  • CIS 1302-Computer Applications (Traditional classroom and online course);
  • CIS 3300-Database Management,
  • CIS 2376-Introduction to Programming,
  • FE 1000 -Freshman Experience course
• Designed computer application internet course

GADSDEN STATE COMMUNITY COLLEGE, Gadsden, AL
Adjunct Instructor - Dec 1992 – Apr 1996
• Taught freshman and sophomore computer classes. – Introduction to Computers
• Conducted PC application workshops (Operating systems (DOS, Windows); Spreadsheets: Lotus; Word processing :( WP (5.1-6.x), Word (5.x -6.x); Database (Dbase 3.x -)....

IMR ASSOCIATES, Gadsden, AL
• Trained individuals on the use of popular word processing, spreadsheet, database and accounting applications in stand-alone and network environments (Windows 3x, 95, NT Microsoft Office software, Lotus SmartSuite; Corel WordPerfect; MAS90...)

TENNESSEE STATE UNIVERSITY, Nashville, TN
Graduate Assistant - Jan 1990 - May 1992
• Asst. Instructor for sophomores and juniors in Statistics

ADMINISTRATIVE/SUPERVISORY EXPERIENCE

FAULKNER UNIVERSITY
• Modified existing curriculum for establishing Faulkner as a Center of Academic Excellence in Cybersecurity – Aug 2018 – May 2019
• Professor and Chair, Computer Science Department - Aug. 2007 – Jul 2018
o Responsible for
  o Hiring and supervision of faculty and staff;
  o Administrative duties pertaining to running the department,
  o Assessment and development of curriculum to meet ABET accreditation standards
  o Development of new degrees for programs within department.
  o Promotion of department programs within and outside of Faulkner’s community
  o Promotion of retention activities for students within the department
• Chair of Curriculum Committee Excellence in Teaching Committee (Aug. 2011 – May 2013)
• Supervised running of computer lab for student and instructional usage – Aug. 1998 – May 2001
• Advised over 43 students/year – Aug. 1999 – May 2002
• Served on Faculty Affairs Committee; Aug. 1999 – May 2001

TROY UNIVERSITY – MONTGOMERY CAMPUS
• Oversaw congruency, compliance and teaching of Introductory programming courses

IMR ASSOCIATES, Gadsden, AL
• Designed, wrote and maintained customized software applications for clients utilizing application platforms that best suited their needs/preferences (FoxPro 2x; ACCESS 97/2000, 5; Visual Basic 6; Visual FoxPro ...)

GLENWOOD MENTAL HEALTH SERVICES, INC., Birmingham, AL
Systems Manager - Feb 1995 - Sep 1997
• Served as liaison/resource person for all agency hardware/software matters
• Maintained 30 user Novell network and over 50 stand-alone systems
• Developed and maintained software applications with conformity to the changing needs of the agency and/or outside agencies
• Directed software training needs of agency employees

TENNESSEE STATE UNIVERSITY, Nashville, TN
Graduate Assistant - Jan 1990 - May 1992
• Worked as an assistant to the Assistant Dean of the School of Business and the Public Relations Director for the School of Business
• Adjunct consultant with the Small Business Development Center
• Performed financial analysis of data from SEC reports

THE SOUTHWESTERN COMPANY, Nashville, TN
Assistant Organizational Manager - May 1989 - Aug 1991
• Recruited, trained and managed sales crew of over 25 college students
• Relocated to Montgomery, AL; Salisbury, MD and Rahway, NJ with sales crew for summer selling program
• Personal retail sales of $8,900 in 1989; $29,000 in 1990 and $33,300 in 1991

NIGERIAN CHRISTIAN INSTITUTE, Nigeria, West-Africa
Sponsor-Institute Liaison - Aug 1985 - Jan 1988
• Reported status of sponsor accounts to institute and kept sponsors abreast of the activities of the institute
PRESENTATIONS

- Mkpong-Ruffin, I., QUANTITATIVE RISK ASSESSMENT MODEL FOR SOFTWARE SECURITY IN THE DESIGN PHASE OF SOFTWARE DEVELOPMENT – A Case Study. AlaSim International Conference 2012 – May 2012
- Mkpong-Ruffin, I., Seals, C., “Minimalist Approach to Object-Oriented Programming Instruction” ELearn October 2006

PUBLICATIONS

Mkpong-Ruffin, Idongesit, Seals C. D., Germany, Celeste; “Minimalist Approach to Object-Oriented Programming Instruction”… ELearn Proceedings, 2006
Mkpong-Ruffin, I; Murphy, A; Larkin, V; Gilbert, J; CAMPNAV – Campus Navigation System for the Visually Impaired… ELearn Proceedings, 2006

RESEARCH EXPERIENCE

- Classification of Vulnerability Incidences in the National Vulnerability database, June 2012;
- Doctoral Research, Auburn University, May 06 – Dec 2008
  - Developing quantitative model that incorporates security factors for assessing risk elements
- Developing Risk Analysis course in accordance with National Information Assurance Standard – CNSS 4016
- Prime III, Auburn University - May 06 – Dec 2008
  Evaluating and developing security model for a multi-modal electronic voting system
- Broadening Participation in Computing- May 06 – May 07
  Collaborating in the creation of the survey instrument for Broadening participation in computing

ACADEMIC SERVICE

FAULKNER UNIVERSITY

- ETS (Educational Testing Service) Reader AP Computer Science 2017, 2018, 2019
- SIGCSE (Special Interest Group on Computer Science Education) Technical Article Reviewer 2017, 2018
- ICETI (International Conference on Education, Training and Informatics – 2016) – Abstract and Article Reviewer - 2016
- SMART (Science, Mathematics and Research for Transformation (DOD) Scholarship Evaluation Panel Reviewer – 2016
- Organized and Directed Summer Enrichment Program in West Montgomery (Summers 2014, 2015)
- Organized and Directed Computer Camp for 5th-12th grade students (Summers 2013, 2015, 2016)
- Reviewer for Broadening Engagement – Supercomputing Conference (2012)
- NCATE Visit (Technology Committee); Chair (2011 – 2012)
- Reviewer for Scholarships for TAPIA Conference (2011)
- Reviewer of Technical Articles for TAPIA Conference (2009)
• Serves on Committees as assigned
  • Technology Committee – 2014 - Present
  • Conditional Admissions Committee 2013 – Present
  • Institute of Faith and the Academy – Advisory Board 2013 - Present
  • Excellence in Teaching Committee, Chair 2012 - 2013
  • Curriculum Committee, Chair 2009 – 2012
  • Faculty Affairs Committee 2007 – Present
  • Curriculum Committee 2007 - Present
  • Search Committees for Faculty and Staff
    o Secretaries for Math, Natural Sciences and Computer Science
    o Director of English Language Institute
    o Associate Professor of Mathematics
    o English Professor

• Served on Faculty Affairs Committee ; Served Curriculum & Instruction Committee
• Directed a Freshman Experience Course – to acclimate entering Freshman into the collegiate environment

**AUBURN UNIVERSITY**
• African-American Researchers in Computer Science (AARCS) Conference July 2006 - Volunteer
• Computer camp volunteer June 2006 – Worked with kids ages 6.5 – 19 on computer application of programming work using Microsoft Office and Alice -3D to teach OO programming concepts

**TROY UNIVERSITY**
• Served on Search committees
  o Dean of College of Business
  o Chair of Computer Science Department
  o Departmental Secretary
  o OGU coordination committee (collaboration to unify disparate systems)
  o Dedication of Student Support Services Committee.
PROFESSIONAL AFFILIATIONS & AWARDS

**Faulkner University**
- Travel Award, Tennessee Tech iPDC Workshop (2019)
- Travel Award, Google Faculty Institute (2018)
- Travel Award, CReST Faculty Workshop (2017)
- Travel Award, Travel Award, National Laboratories Professional Development Workshop (2013)
- Travel Award, STEM Women of Color Conclave (2012)
- Tenure (May 2012)
- Promotion to Full Professor (August 2012)
- ACM; IEEE; AACE, ASEE membership

**Auburn University**
- Doctoral Consortium Participant Award – TAPIA Conference, October 2007
- BRIDGE-DAY Award – Grace-Hopper and TAPIA Conference October 2007
- Student & Technology in Academia, Research & Service (STARS) Recipient (2006/2007)
- Graduate Assistance in Area of National Need (GAANN) Fellow (04/05 – 12/08)
- Presidential Graduate Opportunity Program (PGOP) Award (05/05 – 12/08)
- Advancing Women Faculty in Science, Technology, Engineering and Mathematics (ADVANCE) Award (June 05)
- ACM; IEEE; AACE membership

**The Southwestern Company**
- Top Experienced Dealer (1991)
- Gold Seal Gold Classic Award (1991)
- President’s Club (1990, 1991)
- Growth Award (1990)
- Gold Award (1990); Century Club (1990)

**Tennessee State University**
- Finance & Investment Club, President

**Freed Hardeman College**
- Graduated Cum-Laude 1985
- Student Alumni Association
- Presidential Scholar
- Dean’s List
- Data Processing Management Association
Subject: Student Affairs Update

Background Information and Summary: An update on the following items will be provided:

- Southern Scholarship Housing
- Student Affairs Update
- Anti-Hazing Update
Subject: Academic Affairs Update

Background Information and Summary: An update on the following items will be provided:

- Faculty Workload Study
- Research Update
- MS Construction Management and Engineering Technology
- Licensure Pass Rates
- Highlight of Key Initiatives
  - Freshmen Studies