Memorandum of Understanding (MOU)
between
SANS Technology Institute (STI)
and
Montgomery College (MC)

I. IDENTIFICATION OF PARTIES

SANS Technology Institute (STI) is a cybersecurity undergraduate and masters-level college licensed by The Maryland Higher Education Commission (MHEC)_and accredited by the Middle States Commission on Higher Education, located at 11200 Rockville Pike, Rockville MD 20852.

Montgomery College (MC) is a public, open admissions community college located at 20200 Observation Drive, Germantown, MD 20876. MC has three campuses plus workforce development/continuing education centers and off-site programs throughout Montgomery County.

II. PREAMBLE

This MOU constitutes an agreement between STI and MC to facilitate the launch of STI's Bachelor of Professional Studies in Applied Cybersecurity (BACS) program. STI and MC have worked collaboratively in offering academic cybersecurity programs for nearly four years and worked together to design the BACS program.

We believe BACS will serve as a national model for a cost-effective academic pipeline that supplies highly skilled cybersecurity professionals qualified for elite positions with employers in Maryland and across the nation. Graduates of the BACS program will have completed all requirements for a bachelor's degree and in the process will complete seven advanced immersion cybersecurity courses and associated Global Information Assurance Certifications (GIAC) certifications. These same courses and certifications have been completed by more than 100,000 cybersecurity professionals, but their employers paid the costs. BACS graduates, on the other hand, will have completed those immersion courses and passed the challenging certification exams before entering the workforce. BACS graduates will also have completed an intensive multi-layered internship as a security operations center (SOC) team member, further validating their mastery of useful cybersecurity skills. Thus, employers of BACS graduates will get new employees ready to perform at high levels without requiring months of additional advanced training and tens of thousands of dollars of additional training investment. For the graduates, the BACS will provide credentials and internship

experience that demonstrate hands-on cybersecurity skills and knowledge far beyond those offered in most other undergraduate and graduate cybersecurity degree programs, thereby saving the students years of extra study and tens of thousands of dollars in extra tuition.

With STI providing the upper division courses and Montgomery College providing the general education and foundational computer science and computer security courses, the BACS program is affordable and accessible for students throughout Montgomery County. In particular, the BACS will provide talented MC students with a direct pathway to qualify for cybersecurity jobs by earning multiple, highly valued, specialized cybersecurity certifications that are an integral part of completing the BACS degree. We intend for the BACS to be accessible to students throughout Maryland as additional Maryland community colleges decide to participate in the program by establishing articulation roadmaps like that shown in Table 1 below.

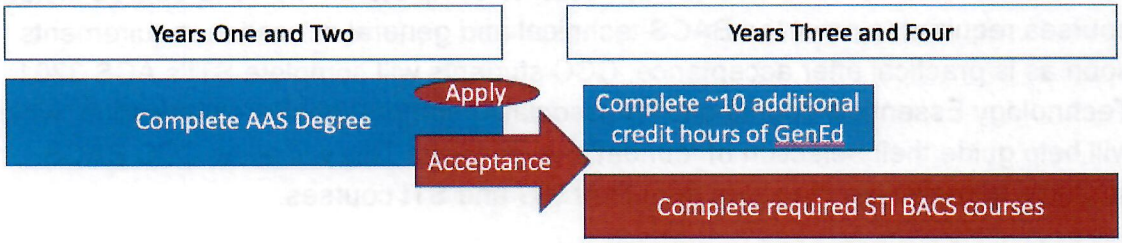
III. PATHWAYS TO A BACS DEGREE

It is the intention of both parties to launch the BACS program in the fall of 2020. We plan to encourage three groups of students to consider pursuing a BACS degree:

(1) AAS Pathway: Students who have completed a MC AAS degree and want to earn a BS degree and gain more specialized cybersecurity knowledge and certifications in order to qualify for certain cybersecurity positions.
(2) Concurrent Community College (CCC) Pathway: Students who are enrolled at MC who have completed at least 15 credit hours, and who are interested in pursuing cybersecurity careers.
(3) Dual Admission Pathway: Students completing high school who are interested in pursuing a direct pathway to a cybersecurity career.

Each of these pathways enable the student to complete an AAS degree at Montgomery College and the BACS degree at SANS Technology Institute. As described in more detail below, program elements shown in blue are to be completed at Montgomery College, while program elements shown red are to be completed at the SANS Technology Institute.

The Completed AAS Pathway to the BACS

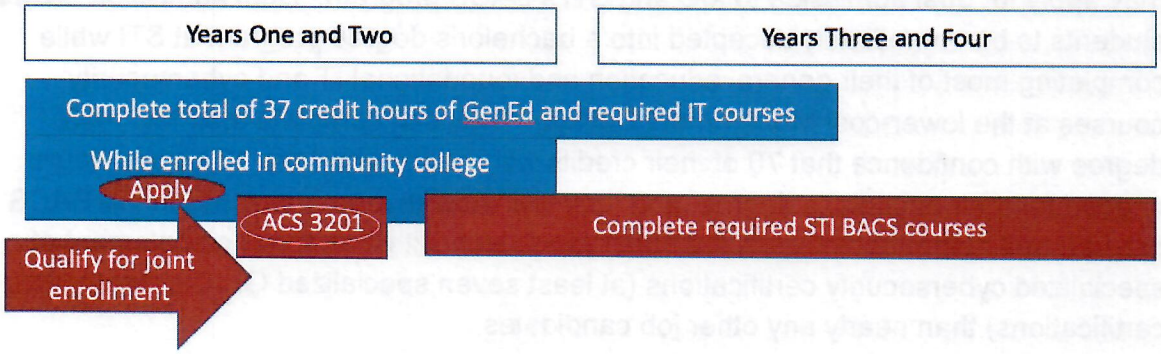


Students who have earned any of the following AAS degrees at Montgomery College may qualify for the STI Bachelors of Professional Studies in Applied Cybersecurity (BACS) program by completing additional foundational (lower division) IT and general education courses:

- Cybersecurity AAS
- Network and Wireless Technologies AAS
- Database Systems Track, Computer Applications AAS
- Information Technology Track, Computer Applications AAS

The BACS foundational requirements were designed to correspond seamlessly with the MC Cybersecurity AAS course requirements, so Cyber-AAS graduates are eligible to apply to BACS provided they have completed at least 37 credit hours of general education courses and earned a grade point average of at least 3.0. Graduates with other AAS degrees will need to take additional MC courses to complete the requirements shown in the BACS Program Articulation Roadmap with Montgomery College (Table 1). MC students may transfer up to 70 credit hours to STI for their BACS degree.

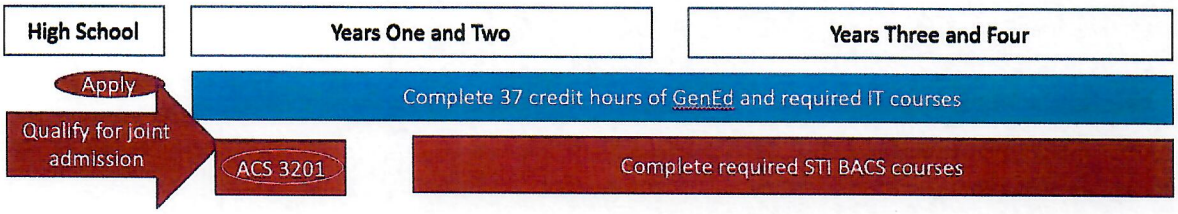
The Concurrent Community College (CCC) Pathway to the BACS



Students who are enrolled at MC who have completed at least 15 credit hours, with a GPA of at least 3.0, may apply for provisional acceptance into STI's BACS program

using the STI Cyber Talent Examination to demonstrate their high likelihood of success in cybersecurity. Students who are accepted will develop a personalized study plan, in consultation with their MC and STI advisors, to complete an MC AAS degree including courses required to meet the BACS technical and general education requirements. As soon as is practical after acceptance, CCC students will complete STI's ACS 3201: Technology Essentials course and its associated comprehensive examination, which will help guide their selection of foundational courses. This will allow CCC BACS students to maximize the value from their MC and STI courses.

Dual Admission Pathway to the BACS



Beginning in the 2017–2018 school year, Maryland Governor Larry Hogan and members of his cabinet sponsored an annual Girls Go CyberStart competition in the state to identify young women with aptitude for success in cybersecurity. More than 1,000 Maryland high school girls participated and nearly 20% of them discovered that they not only enjoyed working on the cybersecurity problems but were also good at solving them. Later in 2020, the Girls Go CyberStart program will be paired with a Boys Go CyberStart program, greatly expanding the number of Maryland students who will have the opportunity to demonstrate they are qualified to pursue training and education in cybersecurity. High school seniors who excel in CyberStart, and others who may have developed cybersecurity skills through capture-the-flag and hobbyist activities, may apply for dual admission to MC and STI's BACS program. Dual admission allows students to be immediately accepted into a bachelor's degree program at STI while completing most of their general education and foundational IT and cybersecurity courses at the lower-cost Montgomery College. They can complete their MC AAS degree with confidence that 70 of their credits will count toward the 120 credit hours needed for their bachelor's degree, and they will know that their success in the BACS program will mean that they will start their job search with a stronger complement of specialized cybersecurity certifications (at least seven specialized GIAC cybersecurity certifications) than nearly any other job candidates.

Students accepted into the dual enrollment program will be assigned both an MC and an STI advisor who, via the liaison activities of the Program Director, will monitor the

students' progress through all four years of their college program and help them decide on the most productive path through MC and STI courses.

Table 1: BACS Program Articulation Roadmap with Montgomery College

BACS Degree General Education Requirements	MC Course (credit hours)	STI Course (credit hours)	General Education or Major
Arts and Humanities	(3)		General Education
College Writing	ENGL101 (3)		General Education
Introduction to Ethics	PHIL 140 (3)		General Education
Mathematics	(3)		General Education
Natural science with lab	(4)		General Education
Interpersonal Communications	COMM 108 (3)		General Education
Business and Professional Communications	COMM 112 (3)		General Education
Research and Writing in the Workplace	ENGL 103 (3)		General Education
Effective Cyber Writing and Speaking		ACS 4023 (3)	General Education
Four General Education Electives	(12)		General Education
Microcomputer Essentials	NWIT 127 (3)		Major
Introduction to Networking	NWIT 151 (3)		Major
Microsoft Windows Server	NWIT 203 (3)		Major
Cisco Networking 2	NWIT 252 (3)		Major
UNIX/LINUX System Administration	CMSC 253 (3)		Major
Six Courses Required for the AAS Degree and Electives	(18)		Major or other
Technology Essentials		ACS 3201 (6)	Major
Introduction to Cybersecurity		ACS 3301 (4)	Major
Security Essentials		ACS 3401 (6)	Major
Automating Information Security with Python		ACS 3573 (4)	Major
Intrusion Detection In-Depth		ACS 3503 (6)	Major
Incident Handling and Hacker Exploits		ACS 3504 (6)	Major
Three Upper-Division Cybersecurity Specialization Electives		(9)	Major
Internship		ACS 3499 (6)	Major
TOTAL BY INSTITUTION	**70**	**50**	
TOTAL FOR BACS DEGREE	**120**		

IV. ADMISSIONS

A. Services

1. STI will provide primary application and admissions services for the AAS pathway, including Cyber Talent Examinations, supported by MC for the evaluation of general admissibility and transfer credit evaluation.
2. MC will provide primary application and admissions services for the CCC pathway and the Dual Admission pathway, supported by STI for the evaluation of the Cyber Talent Examination and general aptitude for the upper division coursework.
3. MC will evaluate transcripts and provide transfer credit decisions for all applications as they pertain to the MC portion of the curriculum, including transfer credit applicability for all general education credit hours.

B. Program Director

1. STI and MC will both provide a Program Director who will coordinate activities that are necessarily shared between STI and MC, including admissions, advising, and student conduct.

C. Faculty

1. MC faculty will continue to teach all MC courses and STI faculty will continue to teach all upper division courses for students in the BACS program.
2. Through the collaboration being fostered by this MOU, MC cybersecurity faculty and STI faculty will establish and nurture an ongoing collegial relationship through the following activities: joint planning of course roadmaps for students in each pathway, MC faculty access to STI's ACS 3201 technology foundations to enable coordinated coverage of topics covered in both programs and to allow MC faculty to recommend improvements to that course, and shared professional development opportunities.

V. STUDENT SERVICES

1. STI will provide the following administrative services and support for students admitted into the BACS program:
    a. Orientation to STI policies, processes, and courses
    b. Basic financial aid and billing support
    c. Career and academic advising
    d. Student conduct proceedings
    e. Graduation services
    f. Alumni services

2. MC will provide the following administrative services and support for BACS-admitted students while they are completing their BACS degree:
    a. Orientation to MC policies, processes, and courses
    b. Registrar services
    c. Basic financial aid and billing support
    d. Transfer course processing
    e. Student conduct proceedings
3. STI and MC program directors will meet at least quarterly to review the progress of each BACS student in order to conduct program coordination as needed.

VI. COMMUNICATIONS, MARKETING, AND RECRUITMENT

1. STI and MC will both actively recruit students to the BACS program, with a focus on the breakdown of admissions pathways as described above in Section IV.
    a. STI recruitment efforts will include visits to Montgomery College, online information sessions, email marketing, and social media marketing.
    b. MC will include STI BACS program marketing materials during activities such as visits to high schools by its recruiters, college fairs, and open houses and campus tours.
    c. STI will support and coordinate with MC recruitment efforts as requested.
2. Both parties agree that marketing materials and other communications must accurately represent the program and the roles of each of the parties. This includes press releases, brochures, public presentations, etc. STI will have the overall coordination responsibility for these materials. MC and STI will each designate representatives from its institution to collaborate with the designated BACS marketing lead at STI.
3. STI and MC will work together to expand knowledge about the BACS program among faculty and administration at other community colleges in Maryland and encourage them to work with STI and MC to enable their students to take advantage of the program by using MC courses to enable their students to complete any BACS-required foundational or general education courses not currently offered at their colleges.
4. In order to encourage broader access to the BACS program, MC will consider offering Maryland students from outside Montgomery County in-county tuition pricing for MC courses required for the BACS.

VII. OTHER MANAGEMENT TOPICS

1. STI and MC intend to conduct research on the educational outcomes of the BACS program and publish papers and present at conferences about it. The two institutions expect to pursue grant funding opportunities as they may arise to enhance the BACS program.
2. STI and MC agree to ongoing collaboration to ensure that the integrity of the BACS program as articulated between the two institutions shall continue to meet industry standards and specifications.
3. All parties to this agreement agree to work together to resolve any program issues through joint input, collaboration, and negotiation.

VIII. ADMINISTRATION OF PROGRAM

STI Administrator:

Betsy Marchant, Assistant Director, SANS Technology Institute

MC Administrator:

Margaret Latimer, Vice President and Provost, Collegewide STEM Unit and Germantown Campus, Montgomery College

IX. RELATIONSHIP OF THE PARTIES

The Parties acknowledge and agree that the relationship between the Parties arising from this Agreement shall not constitute or create any joint venture, partnership, employment relationship, or association between them, that the Parties are acting as independent contractors in making and performing this Agreement, and that this Agreement does not make either Party the employee, agent, or legal representative of the other for any purpose whatsoever. In fulfilling its obligations pursuant to this Agreement, neither Party shall have the authority to bind the other without the prior written consent of such other Party. Neither Party will act or purport or attempt to act to represent the other as its agent or in any manner assume or create any obligation or debt on the other's behalf or in the other's name. No acts performed or representations, whether oral or written, made by or with respect to third parties shall be binding on a Party. In addition, the Parties acknowledge and agree that the relationship outlined in this Agreement is non-exclusive and does not restrict either Party from engaging in similar agreements with other institutions.

X. FORCE MAJEURE

If either party's performance(s) hereunder is rendered impossible, hazardous, or is otherwise prevented or impaired due to sickness, inability to perform, accident, interruption or failure of means of transportation, Act(s) of God, riots, strikes, labor difficulties, war (including civil war), embargoes, epidemics, fires, floods, explosions,

earthquakes, quarantine restrictions, any act or order of any civil or military authority, acts of any government, and/or any other cause or event, similar or dissimilar, beyond that party's control, then each party's obligations with respect to the affected performance(s) shall be excused and neither party will have any liability in connection therewith.

XI. GOVERNING LAW AND FORUM

The terms of this Agreement shall be governed by the Laws of the State of Maryland of the United States. Any dispute arising from this Agreement that is not resolved by agreement of the parties shall be resolved exclusively in the Courts and regulatory agencies of the State of Maryland of the United States.

XII. TERM RENEWAL AND TERMINATION OF AGREEMENT

This agreement becomes effective upon signature by authorized representatives of MC and STI. It remains in effect until June 30, 2024. The parties will discuss and negotiate during Academic Year 2022–2023 the renewal, extension, or modification of the MOU in order to achieve the best path forward for the BACS program.

This MOU may be modified only by mutual written agreement of all parties.

XIII. CORRESPONDENCE

In the interest of implementing this MOU in a systematic manner, STI and MC will each designate a contact person assigned the responsibility of coordinating MOU activities in general terms.

STI: Eric Patterson, Executive Director, SANS Technology Institute

MC: Margaret Latimer, Vice President and Provost, Collegewide STEM Unit and Germantown Campus, Montgomery College

XIV. DATE OF AGREEMENT/SIGNATURES ON AGREEMENT/AUTHORITY TO EXECUTE

This Agreement is dated as of 17 July 2020 and will become effective upon signature by the authorized representatives of the parties. The undersigned individuals represent and warrant that they are expressly and duly authorized by their respective institutions to execute the Agreement.

XV. REQUIRED SIGNATURE

The parties identified below agree to the provisions and terms of this MOU.

APPROVED:

Eric A Patterson 17 July 2020

Eric Patterson — Date
Executive Director
SANS Technology Institute

S K Raj 7/17/2020

Dr. Sanjay Raj — Date
Senior Vice President
Academic Affairs
Montgomery College