We face threats to national and private networks on all fronts, from cyber-terrorism that threatens critical infrastructure, to malicious viruses and malware sent to our personal computers, to criminal organizations stealing valuable intellectual property. Now, more than ever it is essential to ensure the integrity of the Internet systems upon which we all depend in order to better protect our personal and national security. The United States faces a severe shortage of cybersecurity professionals and the demand for cyber-enabled graduates is outpacing the nation’s ability to produce them. Solving cybersecurity challenges requires problem-solving, inter-disciplinary expertise, leadership, and collaboration. Working on these issues collectively is not simply better than facing them alone – it is absolutely necessary.

The University of Maryland is excited to offer the first and only full four-year undergraduate honors program in cybersecurity, ACES: Advanced Cybersecurity Experience for Students. This new program will educate future leaders in the field of cybersecurity by offering a two-year living-learning undergraduate program exclusively for Honors students, the first of its kind in the United States, and a complementary two-year advanced program of study in cybersecurity. Students will have access to rigorous, intensive, hands-on learning experiences throughout their undergraduate careers to learn from each other and from industry and business leaders, strengthen leadership and team skills, and hone technical and non-technical proficiency and knowledge. Students will be cybersecurity scholars, prepared to lead and transform the field and to make a difference in the world.

Who is an ACES Scholar?
The ACES program is for a small group (40-45 per cohort) of academically talented students who have an interest in cybersecurity. An ACES scholar is:

- Willing to learn and develop academically and professionally in a collaborative environment
- Motivated to solve a difficult and complex, long-term challenge that impacts our nation’s security
- Interested in developing a deeper technical and non-technical knowledge to help prevent and deter cybersecurity attacks
- Detail-oriented and a teamplayer
- Interested in working with like-minded, academically motivated students
- Motivated to learn through experience, participation in competitions, and real-world problem solving
A New Model for Cybersecurity Education

Live and Learn Together
ACES students will live and learn together as one community, working closely inside and outside of the classroom. The first cohort (2013-2014) will initially live in Ellicott Hall for their first year. In Fall 2014, the ACES headquarters and housing for ACES I students will be located in the new Prince Frederick Hall, which will include offices, meeting and entertaining spaces, specially designed laboratory space, and state of the art classrooms, all designed to enhance the learning experience.

Experience, Collaborate, Innovate
The cybersecurity curriculum consists of two linked academic programs over the course of four years, a freshman-sophomore living-learning program leading to Honors College Citation in Cybersecurity, (ACES I, 14 credits) and an upper-level course of study in cybersecurity (ACES II, 16-17 credits). The program offers an intensive, interdisciplinary, accelerated curriculum in key technical, policy, behavioral and social science components of cybersecurity. ACES seniors will complete a yearlong capstone project, which will address a foundational challenge in cybersecurity. To meet the need of a cyber-enabled workforce, this interdisciplinary living-learning program will allow ACES students to live together, use embedded, state-of-the-art laboratories and require students to work closely and collaboratively together inside and outside of the classroom.

Learn from Industry Experts
Industry plays a vital role in the success and broader impact of the ACES program. The close partnership between ACES and the program’s industry partners, such as Northrop Grumman, the founding sponsor, and key federal agencies such as the National Security Agency (NSA) and the National Institute of Standards and Technology (NIST), will include a deep and sustained engagement between the students, faculty and industry representatives.

Reinforce Learning through Hands-On Experience
ACES emphasizes combining the knowledge and skills learned in the classroom with real-world, flexible, hands-on experience. Students will benefit from experiential learning opportunities such as individual and group research projects with peers and with faculty members of the Maryland Cybersecurity Center (MC2), participation on the UMD Cybersecurity Team, and collaboration with the security team responsible for protecting UMD’s infrastructure. With the ideal proximity of the University of Maryland to the Washington DC metropolitan area, students will have the opportunity to participate in academic term and summer internships with federal agencies with cybersecurity expertise such as the Department of Defense (DoD) and the National Security Administration (NSA) as well as private firms such as Northrop Grumman. Students will gain a working knowledge of the needs and demands of industry in the cybersecurity field and may have the chance to complete the security clearance process.

Are You Interested in Becoming an ACES Scholar?
For best consideration for admission to the Honors College and ACES I, high school seniors should apply to the University of Maryland by November 1. All students who are admitted to the Honors College in January are then invited to express a preference for Honors College Living-Learning Programs, including the ACES Living-Learning Program.

ACES II is designed for students who have a good working knowledge of computer science (e.g., computer programming, computer systems, programming languages, and algorithms) and who are interested in studying the more advanced hands-on technical aspects of cybersecurity. For more information on the requirements, visit http://www.aces.umd.edu.