

# Virginia Cyber Navigator Program



George Mason University, Norfolk State University,  
Old Dominion University, University of Virginia,  
Virginia Commonwealth University, Virginia Tech

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# The Need

- Secure elections are the bedrock of democracy
- Election systems are critical infrastructure
- Pipeline of cybersecurity professionals working for the public good

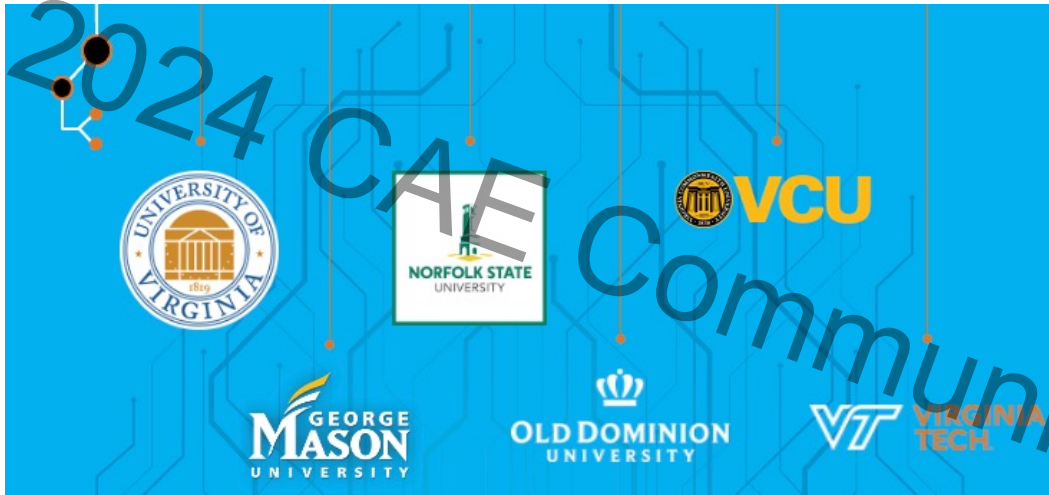


# VA-CNIP Overview



A coalition of Virginia universities, in partnership with the **Virginia Department of Elections**, launched the Virginia Cyber Navigator Internship Program (VA-CNIP) – an innovative experiential learning experience to train **future cybersecurity professionals** to protect **election infrastructure**.

# VA-CNIP Overview



Virginia Department of Elections

Coalition of Six Virginia NCAE Universities and the Virginia Department of Elections



# Virginia Department of Elections (ELECT)



**CAE**  
IN CYBERSECURITY  
COMMUNITY

- Promote and support accurate, fair, open, and secure elections for the citizens of the Commonwealth
  - Establishing cybersecurity needs of the local government election units.
  - Facilitating the selection of the local government units.
  - Ongoing coordination of communication between the local government units and the academic groups.
  - Presenting to the interns about the governmental aspects of security with regard to the overall voting process.
  - Being a resource for an assessment process with regard to the attained cybersecurity levels in the local government units.
  - Being a resource for an assessment of the internship program.

# VA-CNIP Supporters

- National Center of Academic Excellence Program (NCAE) under NSA's National Cryptologic School
- University of Virginia School of Engineering and Applied Science
- CCI – Grant to GMU to fund eight additional interns
- Industrial Advisory Board
  - Greater Washington Partnership, Leidos, Veracode, Ernst & Young, Capital One, Accenture Federal Services, General Dynamics Information Technology (GDIT), Praxis Engineering, Fortinet, LMI

# VA-CNIP Program



- Students take a one-semester, gateway course, **Cybersecurity and Elections**
  - Provides students with an understanding of the historical, cultural, and political significance of voting
  - Discusses the technical issues of securing election processes
  - Introduces students to careers in service for public good
- Class students apply for internship
- Selected interns participate in a two-day, pre-internship Boot Camp





# VA-CNIP Program



- Internship runs for ten weeks
  - Interns are deployed in teams (two to three students per locality)
  - Hybrid – mix of on-site work and virtual engagement and meetings
  - Bi-weekly check-in meetings with ELECT and faculty
- 1.5 day debrief meeting at end of internship
- Final report submitted by each intern



# Gateway Course Learning Outcomes



- Understand election system and legislative history of voting in the United States
- Understand the cultural significance of voting in American democracy and the important role of trust
- Understand possible threats, vulnerabilities, and attacks in election infrastructures
- Understand election system security standards and regulations including the Virginia Department of Elections Voting Systems Security Policies, Standards, Guidelines, and Virginia's Locality Election Security Standards (LESS).

# Gateway Course Learning Outcomes



- Understand necessary security controls for voting systems, voter registration databases, and associated IT infrastructure and systems used to manage elections.
- Become aware of cybersecurity careers in the public sector.

# Year 1 (2022) VA-CNIP Statistics

- 34 Interns: GMU (7), NSU (1), ODU (5), UVA (9), VCU (6), VT (6)
- 16 women
- Localities (17): Appomattox, Chesterfield, Clarke, Floyd, Henry, Madison, Nelson, Northampton, Lancaster, Lexington City, Mecklenburg, Pittsylvania, Richmond Co, Roanoke County, Roanoke City, Westmoreland, Wythe



# Year 2 (2023) VA-CNIP Statistics



- 39 Interns: GMU (10), NSU (3), ODU (2), UVA (16), VCU (6), VT (2)
- 15 Women
- Localities (19): Dinwiddie, Emporia City, Henry, Louisa County, **Northampton**, Manassas City, Montgomery, Orange, **Pittsylvania**, Richmond City, **Roanoke County**, Russell, Salem City, Southampton, Stafford County, Tazewell, Virginia Beach, Virginia Beach City, Washington

# Year 3 (2024) VA-CNIP Statistics

## Projection

- 52 Interns: GMU (10), NSU (4), ODU (4), UVA (22), VCU (6), VT (6)
- 25 Localities





# Lessons Learned



- **Absolutely** requires a committed, dedicated government partner
- Need commitment from participating university administrations
  - Confidentiality agreements
  - Handle student payments
  - Course scheduling and release time
- Involve university career offices, industry and alumni
- Emphasize to the students that they are making a commitment
  - Tie course to internship (grade depends on internship participation)
- Collect statistics at each step (demographics, results, etc.)
- Maintain contacts (students, localities, speakers, etc.)





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# Questions

2024



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