

BUILDING LINKS:



How Augusta University Grows K-12 Interest in Cybersecurity by 100% with Open Access to its Virtual Cyber Lab

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Welcome!

- **About Augusta University**
- **Building Consensus: Alliance for Cyber Education (ACE)**
- **GA K-12 Career Pathways/NICE Cybersecurity Framework**
- **Remote Access to University Cyber Virtual Labs**
- **K-12 Impact - over 300 students**
- **Georgia Cyber Center**



AUGUSTA
UNIVERSITY

ACADEMIC PROFILE

2017-2018

145+
student
organizations

146 
academic programs

10 Schools & Colleges 



5,291
Undergraduates

2,928
Grad/Professional

605
Residents

Total Applicants **10,071**

Total Admitted **4,450**



1,394
Undergraduates

772
Grad/Professional

female students **62%**

male students **38%**



 **1,876**
degrees conferred
AY 2017

first year retention* **73.1%**

freshmen progression* **52.1%**

* Fall 2016 New Freshmen



 **\$111.3M**
sponsored support
FY 2017

\$256.0M 
grant submissions

 **\$21.3M**
F&A costs

1,025 
publications

Campus Locations in:

- ★Augusta
- Albany
- Athens
- Columbus
- Macon
- Rome
- Savannah



Clinical Teaching Sites: **1,244**
Total Living Alumni: **56,000+**

 **1,664** faculty
as of 11/1/17
1,105 FT **559 PT**
86% with terminal degrees

About Augusta University...

- One of four research universities in Georgia
- State's only public Academic Health center
- Become a leader in cybersecurity education and training
- Achieved NSA/DHS as a Center of Academic Excellence in Cyber Defense Education (CAE-CDE)



Augusta – Location, Location, Location

DOD Neighbors

- NSA Georgia
- Cyber Center of Excellence (Cyber CoE)
 - Cyber School
 - Signal School
- Joint Force Headquarters - Cyber (JFHQ-C)
- Cyber Protection Brigade
- Future home of US Army Cyber Command (ARCYBER)

Medical Neighbors

- AU Medical Center
- Charlie Norwood VA Medical Center
- Eisenhower Army Medical Center
- Augusta Warrior Project

Nearby Neighbors

- Department of Energy
- Savannah River National Laboratory
- Plant Vogtle



- Columbia County School System
- Richmond County School System



The Alliance for Cybersecurity Education

Mission & Membership

Aiken Technical College

Augusta Technical College

Augusta University

Augusta Metro Chamber of Commerce

CSRA Alliance

Columbia County School System

Columbia County Chamber of Commerce

Fort Gordon

Richmond County School System

- ACE founded to facilitate the creation of a community-based cybersecurity niche to raise the effective value of the 6-12 educational system and its integration into post-secondary education.
- ACE seeks to increase area students' capabilities, generate an employable cybersecurity workforce, and position the CSRA as a resource and partner to the NSA/Cyber COE/Ft. Gordon in cybersecurity expertise.

Guidance and Counseling

- [Guidance and Counseling Overview](#)
- [Career Development](#)
- [Counselor Resources](#)
- [Guidance and Counseling](#)
- [Capstone Career Related Project](#)
- [Hospital Homebound Services](#)
- [School Counselor Information](#)
- [School Social Work](#)

Clusters/Pathways

Development and Transition

- [Development and Transition Overview](#)
- [Career Related Education](#)
- [Economic & Workforce Development](#)
- [Transition Career Partnerships](#)
- [High Schools That Work](#)
- [Industry Certification Standards](#)
- [JROTC](#)
- [Middle School Performance Standards](#)
- [Nontraditional Occupations](#)
- [Professional Development](#)
- [STEM/ STEAM Georgia](#)

Information Technology

Cybersecurity

- [Introduction to Digital Technology](#)
- [Introduction to Cybersecurity](#)
- [Advanced Cybersecurity](#)

Game Design

- [Introduction to Digital Technology](#)
- [Computer Science Principles or AP Computer Science Principles](#)
- [Game Design: Animation and Simulation](#)

Internet of Things

- [Introduction to Digital Technology](#)
- [Computer Science Principles or AP Computer Science Principles](#)
- [Embedded Computing](#)

Programming

- [Introduction to Digital Technology](#)
- [Computer Science Principles or AP Computer Science Principles](#)
- [Programming, Games, Apps, and Society](#)

Web Development

- [Introduction to Digital Technology](#)
- [Computer Science Principles or AP Computer Science Principles](#)

Computer Science

- [Introduction to Digital Technology](#)
- [Computer Science Principles or AP Computer Science Principles](#)
- [AP Computer Science \(Contact College Board for standards\)](#)

Information Support and Services

- [Introduction to Digital Technology](#)
- [IT Essentials](#)
- [IT Support](#)

Networking

- [Introduction to Digital Technology](#)
- [Networking Fundamentals](#)
- [Networking Systems and Support](#)

Web and Digital Design

- [Introduction to Digital Technology](#)
- [Digital Design](#)
- [Web Design](#)



IT Career Cluster

Introduction to Cybersecurity (IT-ICS)

- **Demonstrate employability skills required by business and industry.**
- **Demonstrate an understanding of cybersecurity concepts and research.**
- **Identify fundamental principles of networking, local area networks, client-server and peer-to-peer networking models and wide area networks.**
- **Identify the fundamental principles of the Open Systems Interconnection Model, IPv4 and IPv6, and common networking services to include Name Resolution Techniques.**
- **Demonstrate how to work with the basic and advanced command prompts.**
- **Explore and research network infrastructures and network security.**



IT Career Cluster

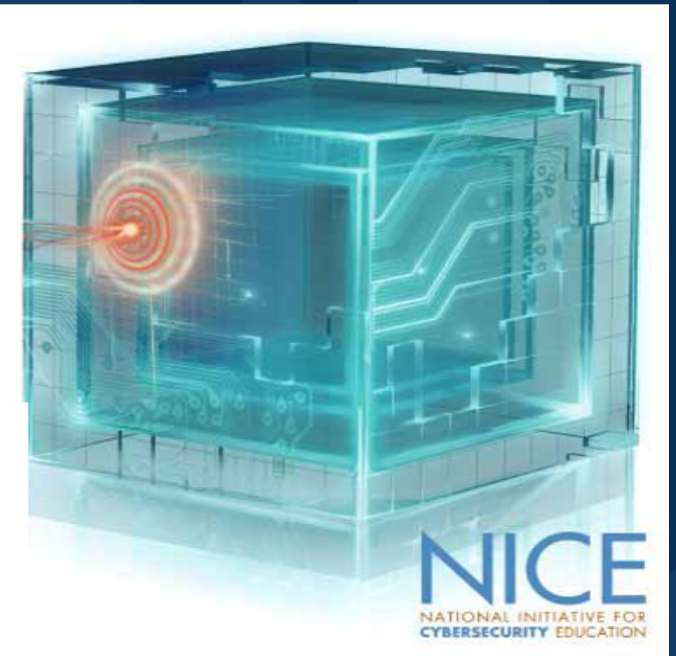
Introduction to Cybersecurity (IT-ICS)

- **Demonstrate how to work with fundamental components of cybersecurity.**
- **Demonstrate how to employ host system and application security.**
- **Demonstrate how to implement proper security administration.**
- **Demonstrate how to implement proper access controls and identity management.**
- **Research and explore basic principles of cryptology.**
- **Explore how related student organizations are integral parts of career and technology education courses through leadership development, school and community service projects, entrepreneurship development, and competitive events.**

<http://www.gadoe.org/Curriculum-Instruction-and-Assessment/CTAE/Documents/IT-Advanced-Cybersecurity.pdf>

GaDOE Cybersecurity Pathway Targets

Securely Provision	Information Assurance Compliance	Software Assurance & Scty Eng	Systems Security Architecture	Technology Research & Development	Systems Requirements Planning	Test & Evaluation	Systems Development
Operate & Maintain	Data Administration	Knowledge Management	Customer Service & Tech Support	Network Services	Systems Administrator	Systems Security Analyst	
Oversight & Development	Legal Advice & Advocacy	Strategic Planning & Policy	Education & Training	Info Systems Security Operations	Security Program Management		
Protect & Defend	Computer Net Defense Analysis	Incident Response	CND Infrastructure Support	Vulnerability Assessment & Management			
Analyze	Threat Analysis	Exploitation Analysis	All-Source Analysis	Targeting			
Operate & Collect	Collection Operations	Cyber Operational Planning	Cyber Operations				
Investigate	Investigations	Digital Forensics					



Initial Achievements

- ✓ Created Cybersecurity (Curriculum) Pathway for Georgia High Schools.
 - Spring 2015: Curriculum approved by the Georgia Board of Education
 - Fall 2015: Curriculum offered in Richmond/Columbia County
 - Richmond County: Academy of Richmond County, Technical Career Magnet School, and Hephzibah High School.
 - Columbia County: Lakeside, Greenbrier, and Grovetown High Schools.

Challenges

1. Create high school teacher professional development to teach this new curriculum.
2. Identify and appropriate technology resources to support cybersecurity curriculum

Augusta University Initiative

- To support and help the local community
 - ✓ Conducted Training for HS Teachers
 - ✓ Allowed Remote Access to AU Virtual Lab to enhance cybersecurity learning for four high schools
 - Richmond County: Academy of Richmond County, and Technical Career Magnet School.
 - Columbia County: Greenbrier and Lakeside High Schools.

NETLAB+



NETLAB+ is a remote access solution developed by Network Development Group (NDG) that allows academic institutions to host IT equipment, virtual machines, and custom courseware.

➤ NDG has over a decade of experience and partnerships with the following organizations:



- The Center for Systems Security and Information Assurance (CSSIA) uses NETLAB+ to facilitate hands-on cybersecurity competitions.
- The National Cyber League (NCL) utilizes NETLAB+ to support cyber competition stadiums.

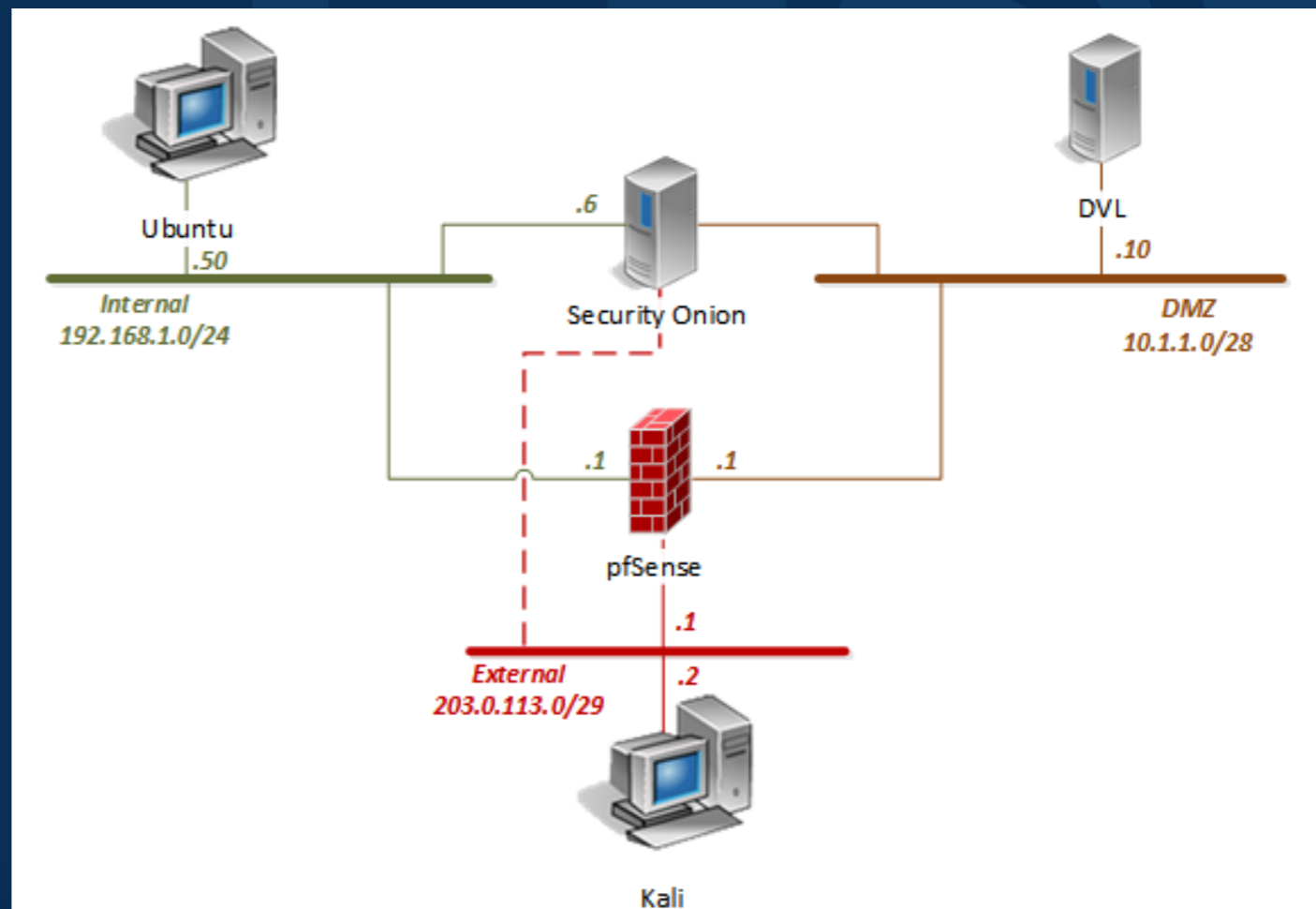
NISGTC Security+

➤ Overview:

- Students gain hands-on practice in the skills needed to secure a network.
- Aligns with CompTIA Security+ Certification.

➤ Content:

- 5 Virtual Machines.
- 16 Lab Exercises.



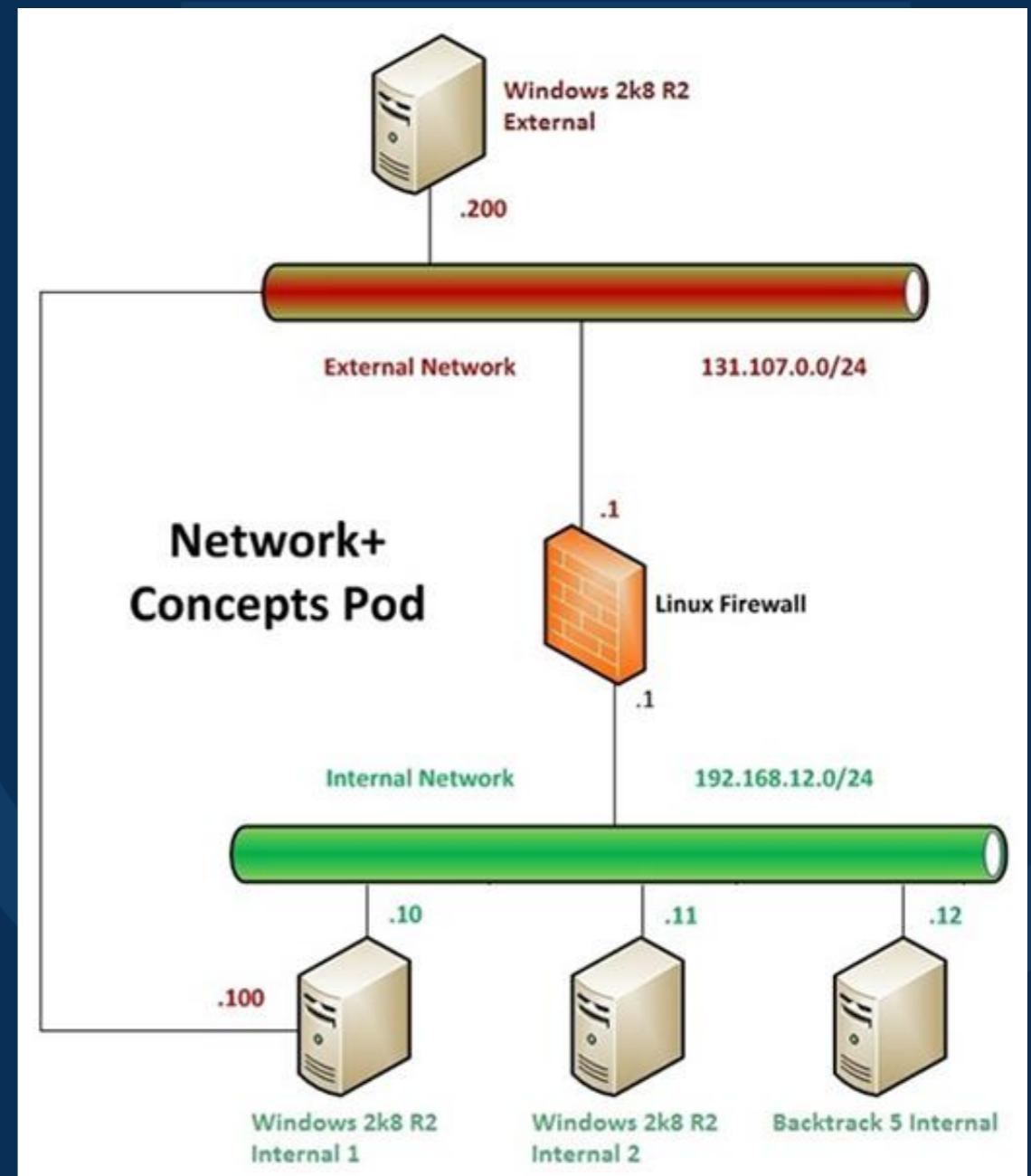
NISGTC Network+

➤ Overview:

- Students learn key skills to troubleshoot, configure, and manage a network.
- Aligns with CompTIA Network+ Certification.

➤ Content:

- 5 Virtual Machines.
- 12 Lab Exercises.



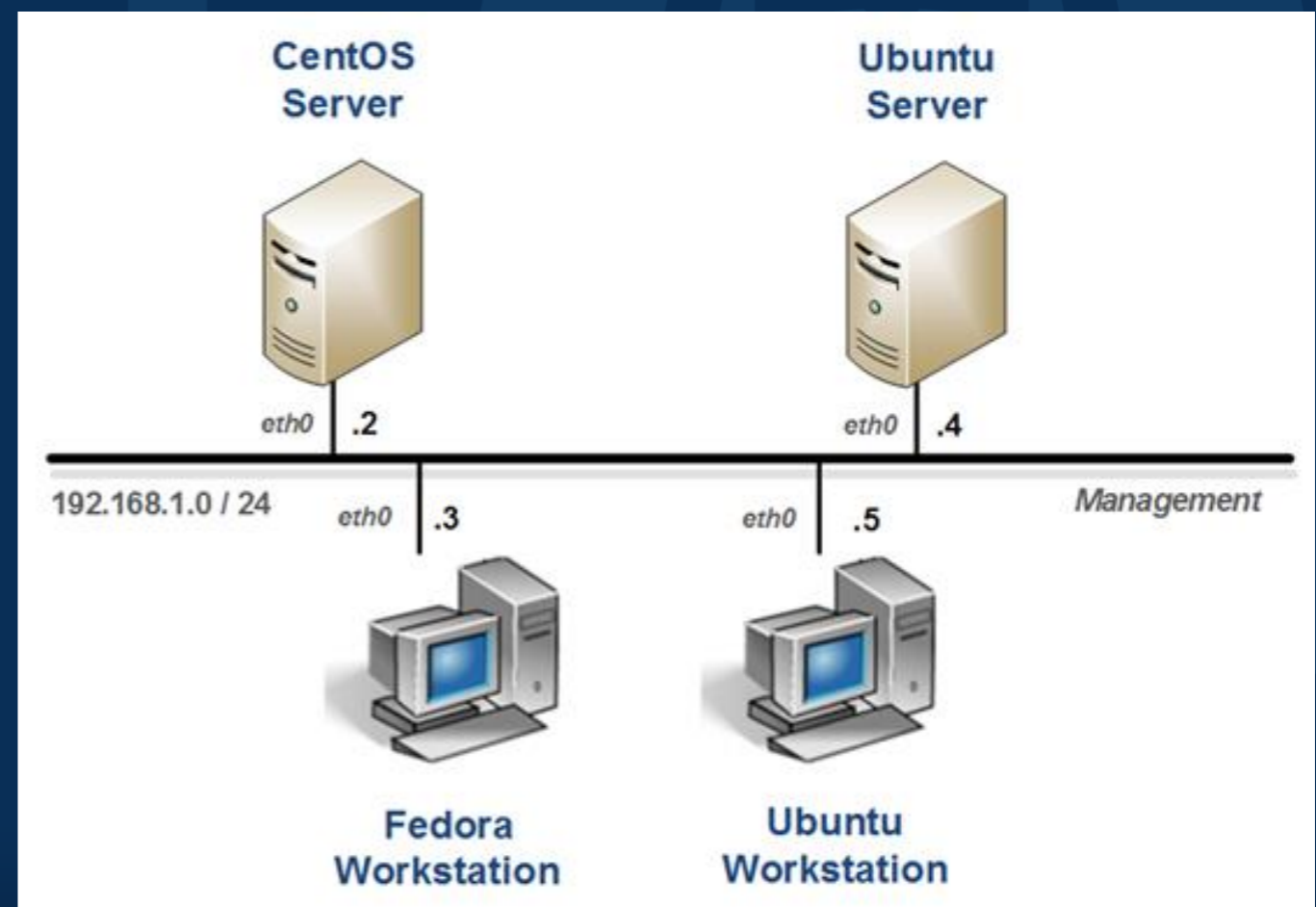
NISGTC Linux+

➤ Overview:

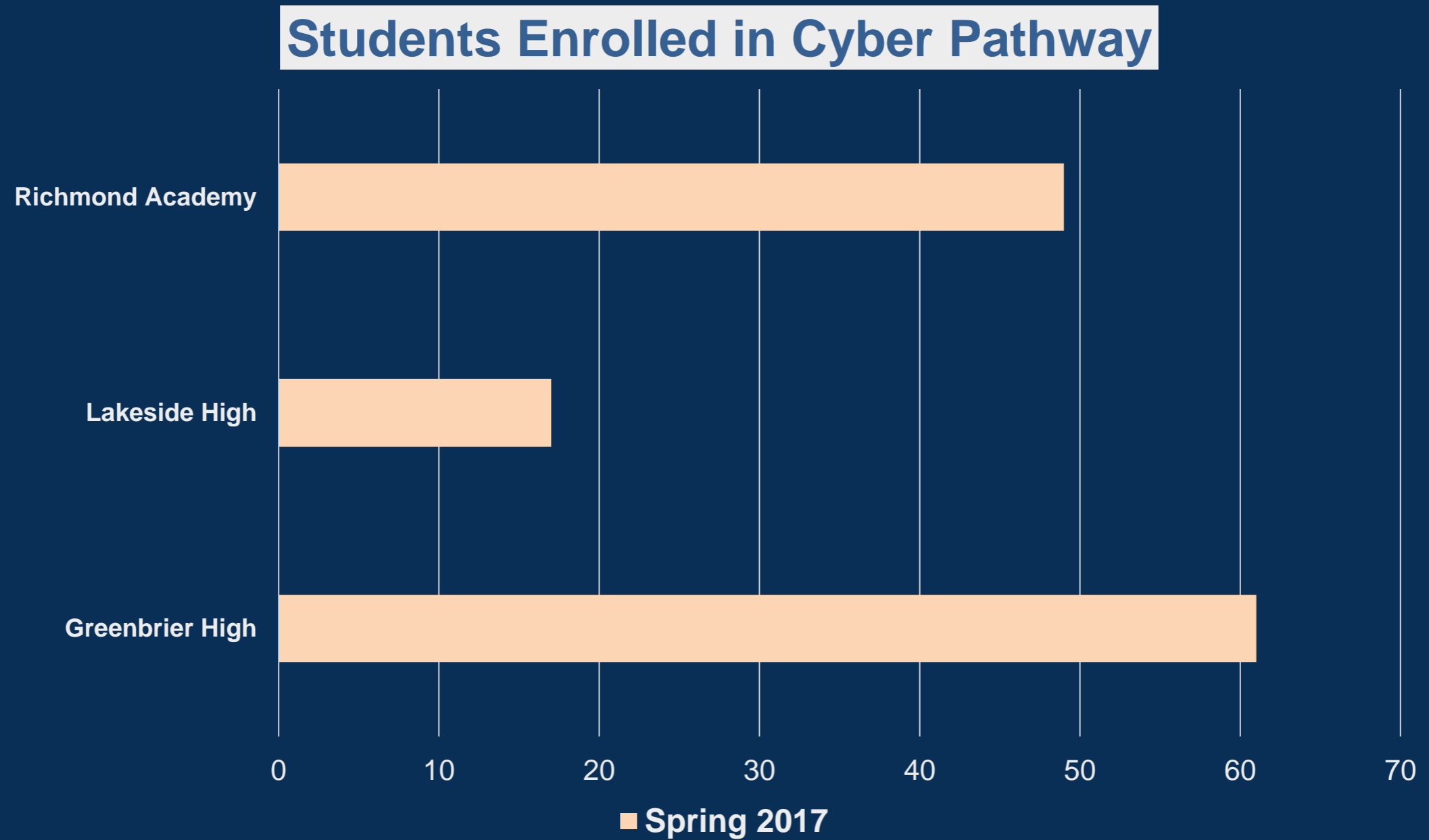
- Students gain hands-on practice in the skills needed to configure, manage, and troubleshoot Linux systems.
- Aligns with CompTIA Linux+ Certification (LPIC-1).

➤ Content:

- 4 Virtual Machines.
- 22 Lab Exercises.

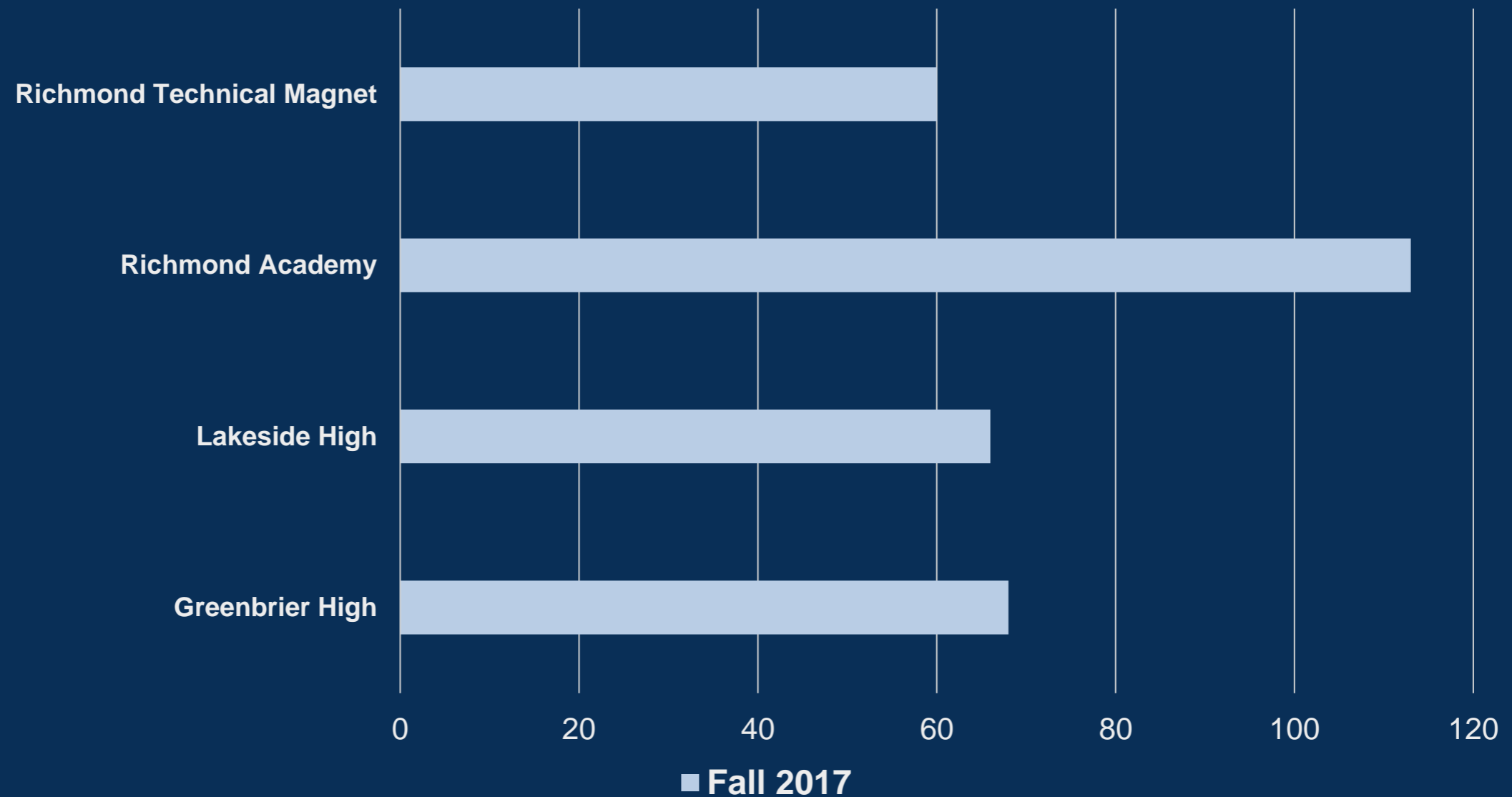


Impact – 127 students



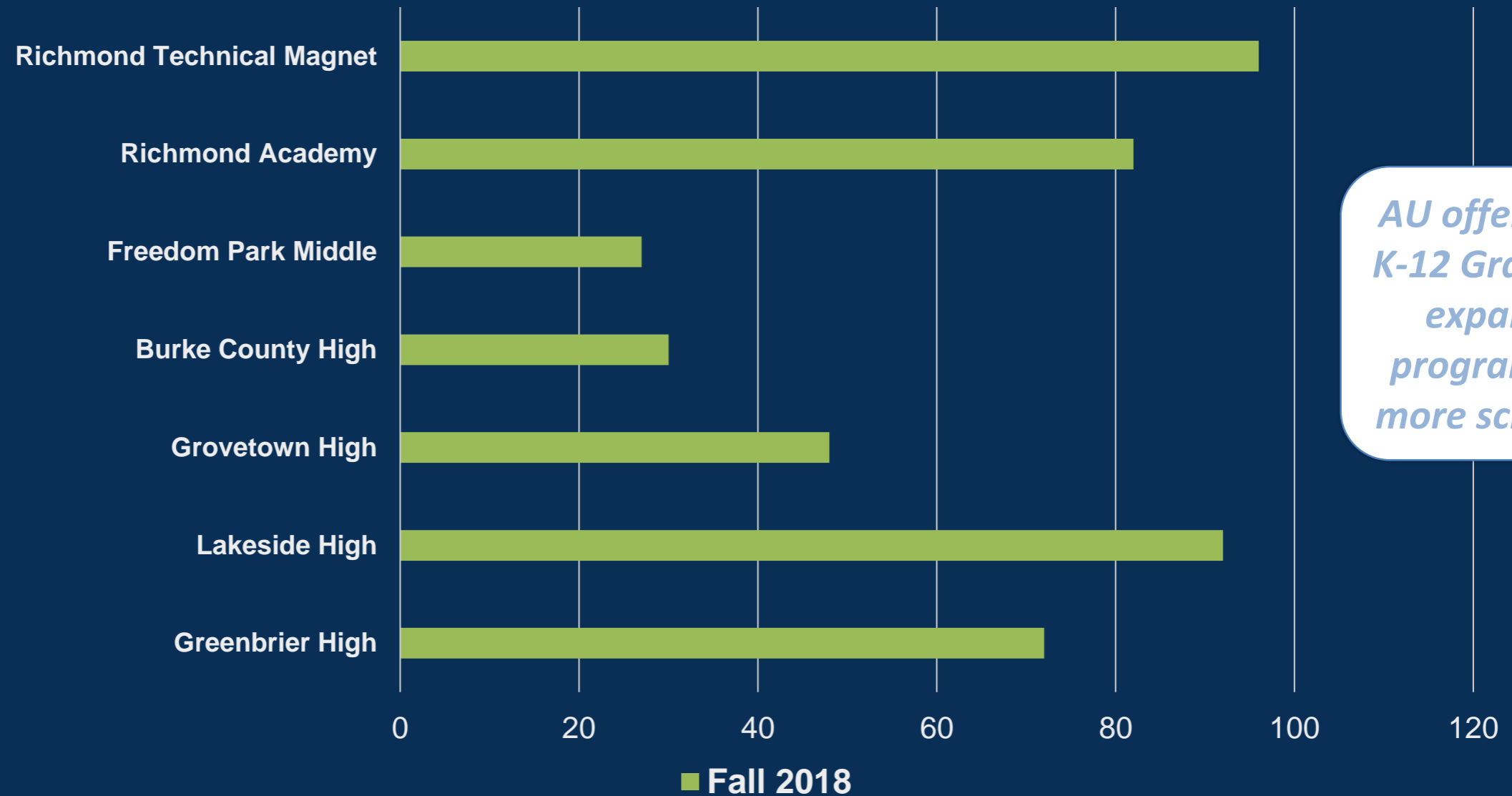
Impact – 307 students

Students Enrolled in Cyber Pathway



Impact – 447+ students

Students Enrolled in Cyber Pathway



Greenbrier High School

- Whitney Poucher
- CTAE Teacher – Cyber Career Pathway
- Cyber Patriots Coach
- Media/News
 - [WRDW News](#) “A new cyber curriculum is heading to some surrounding high schools”
 - [Education Week](#) “Schools Teach Cyber Hygiene to Combat Phishing, Identity Theft”
 - NICE K-12 video -





What's Next?

- GA investment \$100M
- Cyber Workforce Development –academia, industry, government to address GA needs

Hull McKnight Georgia Cyber and Innovation Training Center – July 2018

Home for the new School of Computer and Cyber Sciences

<https://www.youtube.com/watch?v=378kPThAx6U>

Questions?

Find us on social media!



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