GRIFFISS INSTITUTE

VICEROY

Virtual Institutes for Cyber & Electromagnetic Research & Employ

Overview Briefing

VICEROY

UNDER SECRETARY OF DEFENSE FOR RESEARCH AND ENGINEERING
USD R&E
DEPARTMENT OF DEFENSE

AFRL
THE AIR FORCE RESEARCH LABORATORY
LEAD | DISCOVER | DEVELOP | DELIVER

Discover How GI, OUSD and AFRL Are Working Together To Diversify Our Future Cyber Workforce

VICEROY | Collegiate Freshmen & Sophomores

Virtual Institutes for Cyber & Electromagnetic Research & Employ

VICEROY Objective

VICEROY was created to increase the quantity and quality of students who possess job-ready Department of Defense (DoD) cybersecurity skills upon graduation.

Cyber-Related College Students

VICEROY

U.S. Department of Defense

THIS IS HOW WE DO IT

VICEROY PARTNERS

- OUSDR&E
- AFRL
- Griffiss Institute

TALENT DEVELOPMENT

- Academia
- Internships

VENTURE DEVELOPMENT

- Armed Forces
- Department of Defense

Project Clients

Mr. CJ Maciag

Director of Cyber Technologies DCTO (Critical Technology), Integrated Sensing and Cyber (IS&C) Office of the Under Secretary of Defense Research and Engineering

Mrs. Sonja Glumich

VICEROY AFRL PM

Mrs. Rachel Nappi

VICEROY AFRL Deputy

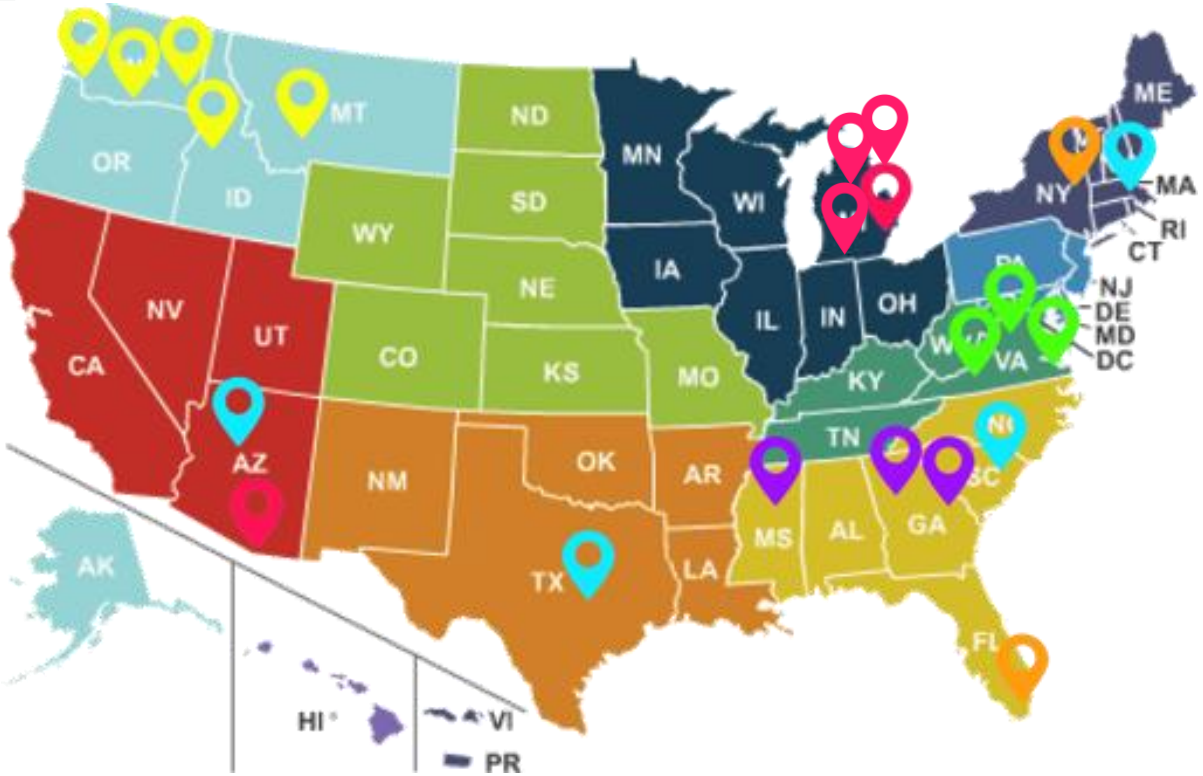
AFRL
THE AIR FORCE RESEARCH LABORATORY
LEAD | DISCOVER | DEVELOP | DELIVER

Virtual Institutes

Washington State University

University of Detroit Mercy

Mississippi State University



Northeastern University

University at Albany
State University of New York

Virginia Tech

VICEROY™ Virtual Institutes (Lead Universities in BOLD)

Washington State University
Columbia Basin College
Montana State University
University of Idaho
Central Washington University

- CIA & Security Principles
- Cryptography
- Virtualization
- Operating System Security
- Reverse Engineering
- Forensics

Northeastern University
Northern Arizona University
University of Houston
University of South Carolina

- Cybersecurity
- EMS
- Cryptography
- Data Science
- Strategic Foreign Languages
- DoD-related Research

University of Detroit Mercy
University of Arizona
Macomb Community College
Oakland Community College
Washtenaw Community College

- Ground vehicle cybersecurity
- intra-vehicle communication
- in-vehicle wireless interfaces
- vehicle to infrastructure interfaces
- ECU interfaces

Virginia Tech
Old Dominion University
Norfolk State University

- Cyber System Characterization
- Software Defined Networks
- Software Defined Radios
- Cyber Security Assessment
- Cyber Defense/Attack

Mississippi State University
Clark Atlanta University
Augusta University

- Cybersecurity
- Cybersecurity Engineering
- Cyberoperations
- Foundations of Cryptography
- Data Science
- Strategic Foreign Languages
- Instructor Training

University at Albany (UAlbany)
Florida International University

- Cyber Defense
- Digital Forensics
- IoT Security
- AI and Data Analytics for Cybersecurity
- Strategic Cybersecurity

MAVEN MISSION, VISION, AND CORE VALUES

- **Vision**: Military, civilian, and industrial base sectors bolstered by a network of VICEROY Cyber Mavens
- **Mission**: Shepherding the next generation of cyber leaders into military, civilian, and industrial base sector careers
- **Core Values**
  - Diverse technical acumen
  - High-stakes problem solving
  - Effective leadership and followership
  - Respect for national imperatives and capabilities

2023 VICEROY MAVEN SUMMER INTERNSHIP

- 48 first-year interns, 5 graduate assistants
- 12 June - 4 August 2023 in Rome, NY
- Leadership, writing, public speaking, research, capstone, and graduation dinner components
- New for 2023
  - AF/SF mission and electromagnetic spectrum (EMS) emphasis
  - Cyber and EMS-focused lectures on Uncrewed Aerial Systems, Satellites, Cyber-Enabled Munitions, SCADA, and Military IoT
  - Blue Book® cyber vulnerability assessment of a mission system
  - IEEE conference-style paper on research projects
  - Hands-on cyber and EMS exercises

CURRICULUM ELEMENTS

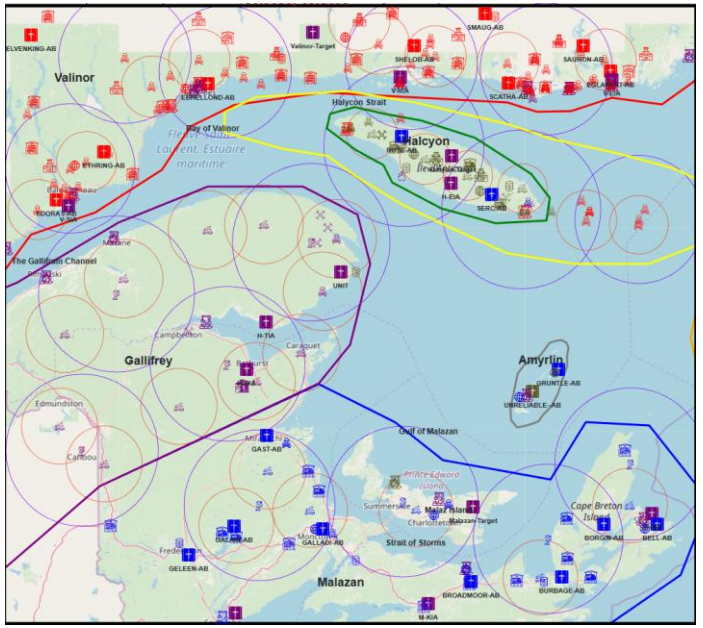
Category	Description
1. Service and DoD Careers	DoD stories of service, career fair
2. Domains/Missions	Immerse in mission-mindset through mission and mission system lectures, Blue Books®, and capstone event
3. Mission Systems	Satellites, UAS, Cyber-enabled Munitions, SCADA, Military IoT
4. Core Cyber	OS and Network Fundamentals, CIA, OCO, DCO, and AI/ML-cyber
5. Core EMS	Signal generation, transmit/receive, offensive and defensive techniques
6. Leadership and Teamwork	Writing, public speaking, Blue Book®, and research teams
7. Assessment	Writing and speaking rubrics, peer assessment, pre- and post-test

2023 WEEKLY SCHEDULE RHYTHM

Time	M	T	W	H	F*
0800-1200	Lecture, IEEE and Blue Book® Drafts Due, Elevator Pitches, Lecture, Blue Book® Section Tasking B106 Aud	Research, Work on IEEE paper	Research, Work on IEEE paper	Research, Work on IEEE paper	Cyber Exercises Urtz
1300-1700					Lunch & Learns EMS Exercises Urtz

MAVEN INTERNSHIP CAPSTONE

- Partnership with AFRL/RI's *Blue Edge* competition development team
- **Concord Dawn Capstone**: Transmit the coordinates of a High Value Target to a UAV to enable target strike
- **Future**
  - Custom capstone tailored to the new MAVEN curriculum
  - Blue Edge developing additional competitions for all VICEROY students



FUTURE AIM: EXPAND TO OTHER SERVICES

VICEROY MAVEN PLAYBOOK

- Yearly Battle Rhythm
- Curriculum
- Schedule
- Templates
- Cross-Service Capstone

U.S.ARMY

UNITED STATES NAVY

Benefits
- Expands VICEROY internship capacity
- Introduces service-specific mission sets
- Builds cross-service collaborations

2023 Internship

2023 Intern Metrics:

- 63 Accepted Interns
- 13 Female Interns
- 14 Interns from HBCU/MSIs
- 21 Non-Caucasian Interns

HBCU/MSIs Represented:

- 1 Intern from Norfolk State University
- 5 Interns from Florida International University
- 5 Interns from Clark Atlanta University
- 3 Interns from University of Houston

ROTC Candidates:

- 13 ROTC Candidates
  - 10 Intern ROTC Candidates
  - 3 GA ROTC Candidates

DoD Host Sites

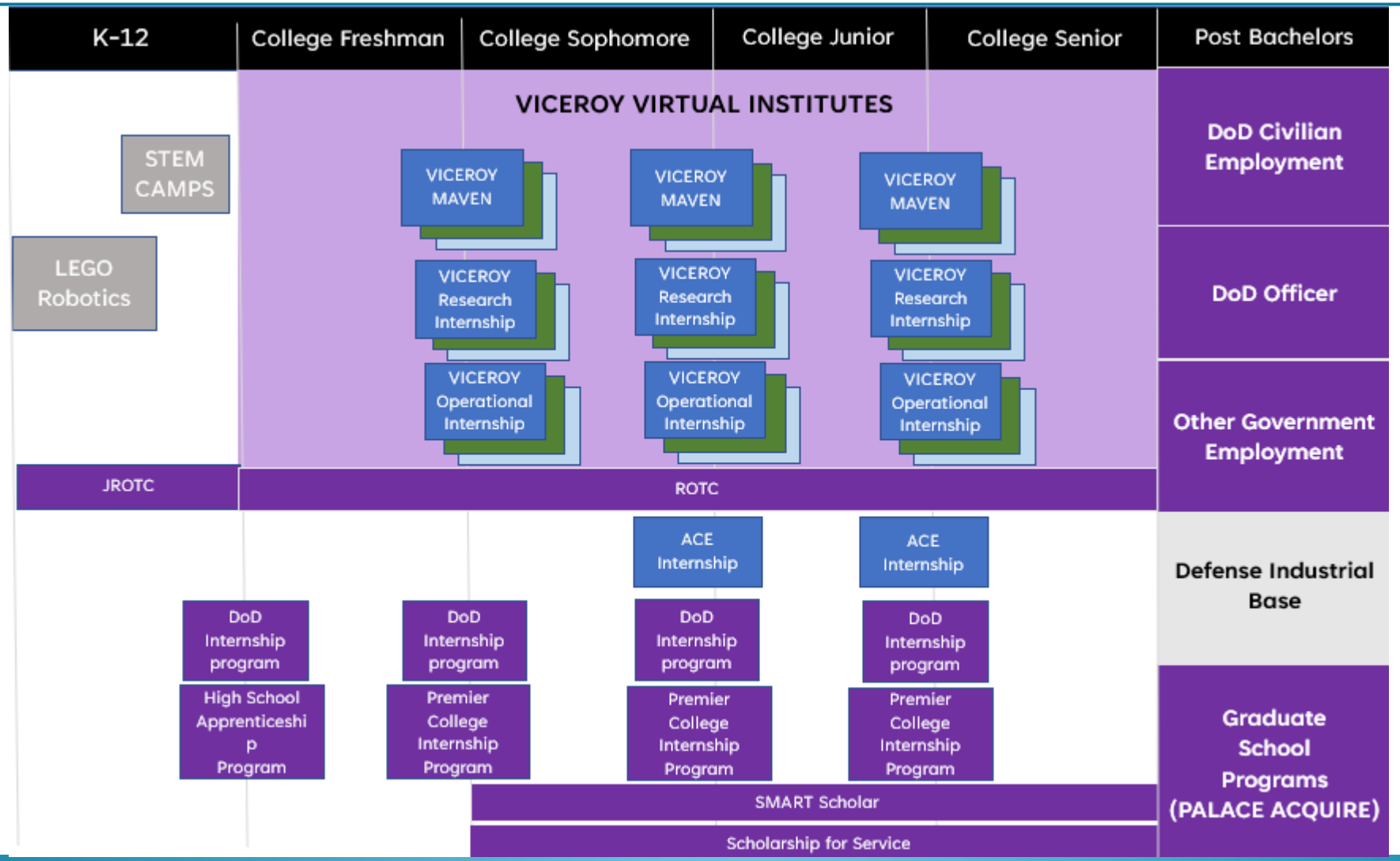
KEESLER AIR FORCE BASE

JOINT BASE SAN ANTONIO
THE PREMIER INSTALLATION IN THE DEPARTMENT OF DEFENSE

EGLIN AIR FORCE BASE

NAVSEA
NAVAL SEA SYSTEMS COMMAND
NAVAL SEA SYSTEMS COMMAND
THE FORCE BEHIND THE FLEET

Student Pipeline



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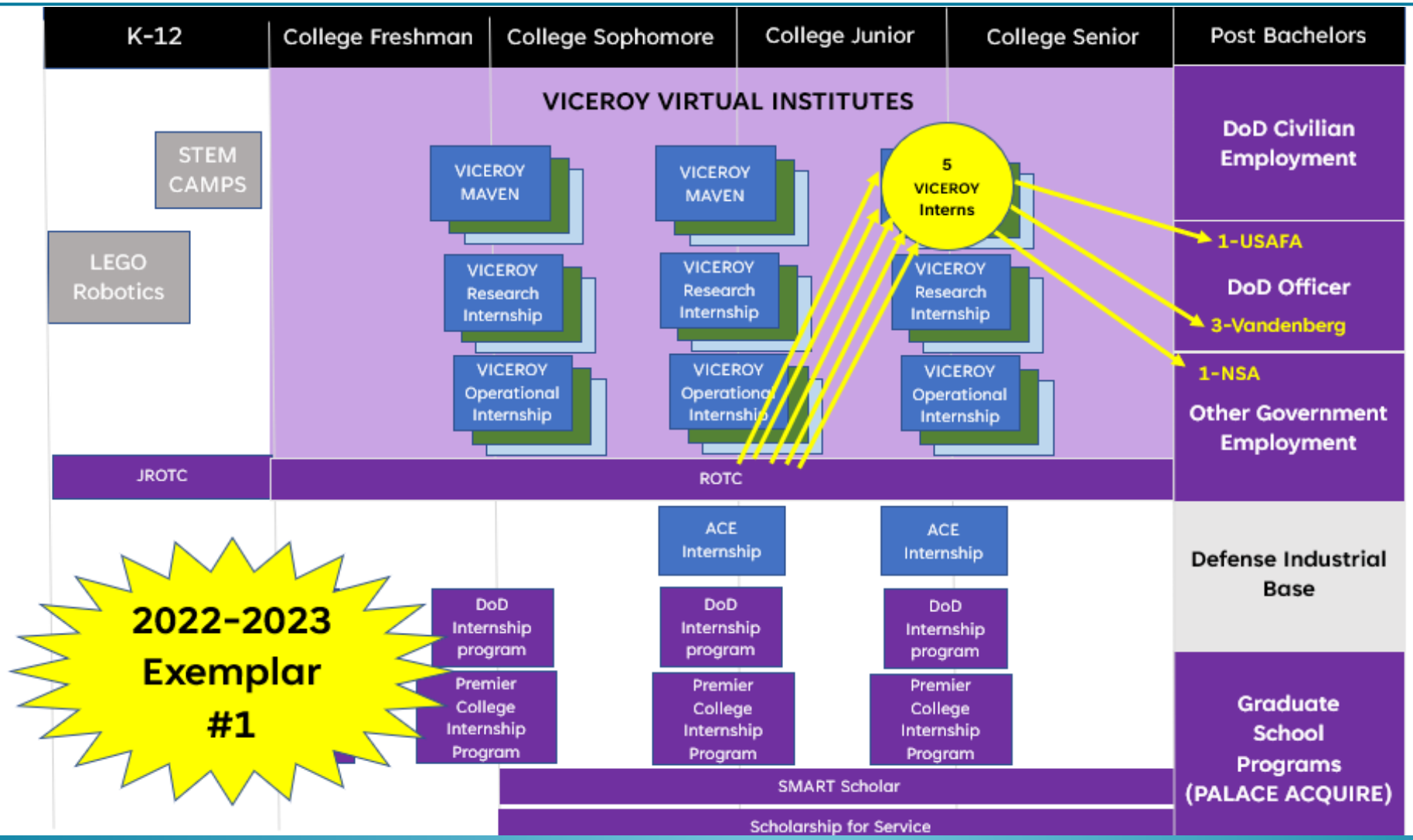

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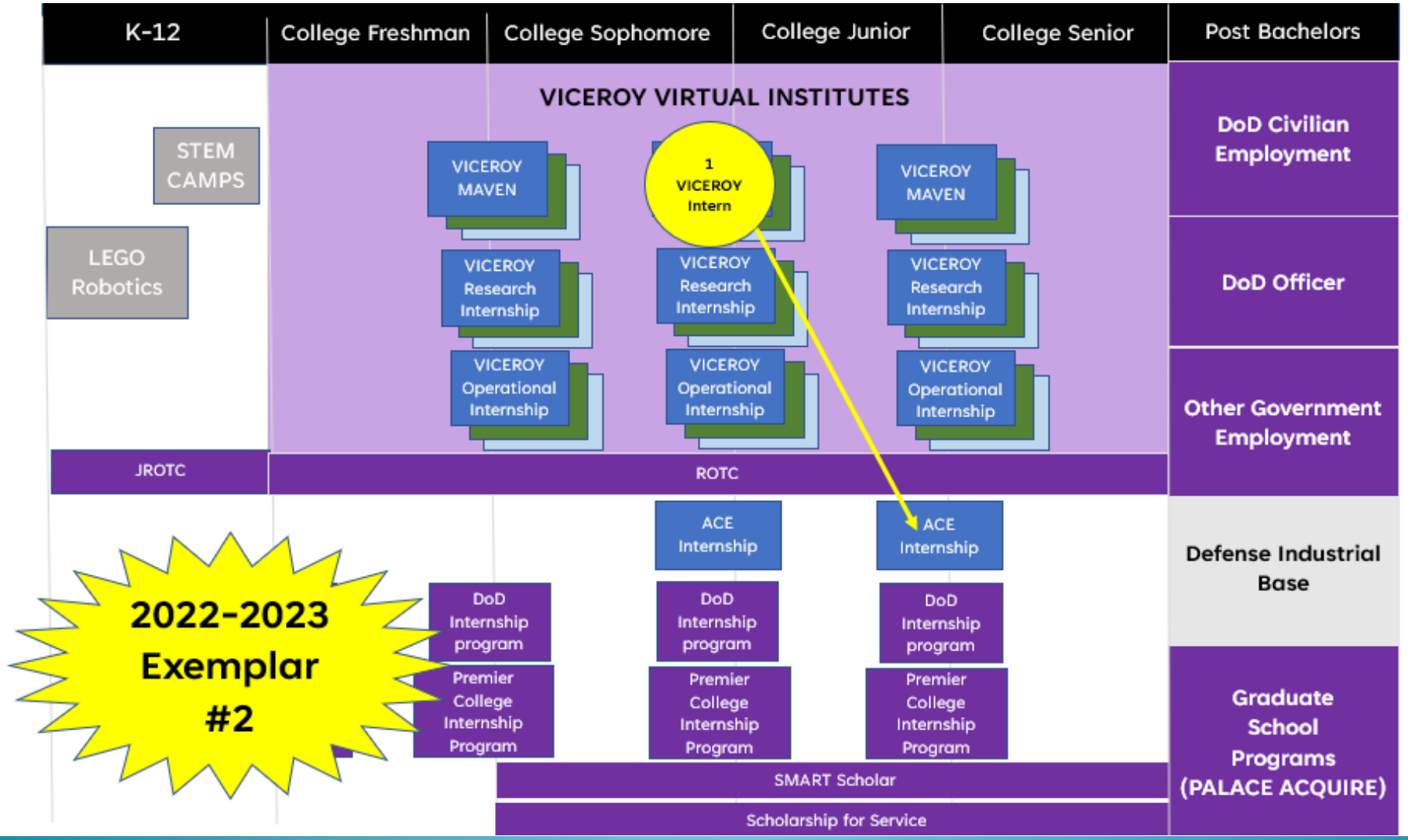

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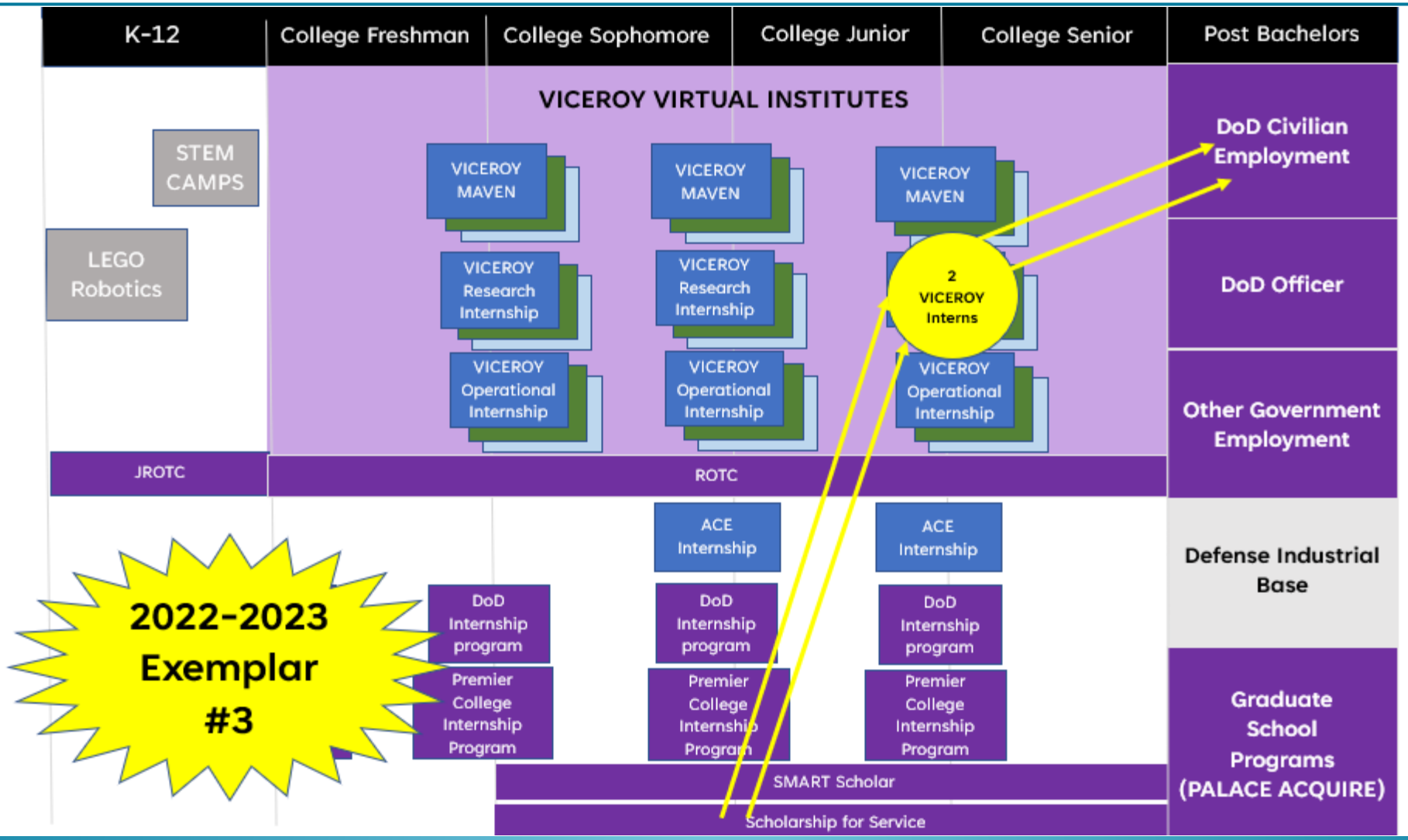

Student Pipeline

VICEROY Objective

DoD Host Sites

2023 Intern Program

Project Clients

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