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# BASHA HIGH SCHOOL

INSTITUTE OF CYBER OPERATIONS AND NETWORKING



# YOUR TEAM



**Chandler Unified  
School District**



**Basha High  
School**



**Chandler-Gilbert  
Community  
College**

# The State of Cybersecurity

Presented by

Tim Roemer, Chief Information Security Officer for the State of  
Arizona

and

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ADOA-Arizona Strategic Enterprise Technology Office



# The New Frontier

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## PURPOSE

To protect computer systems, software, data, and people, from attacks, disruptions, theft, unauthorized access and damage

## INDUSTRY

Security is needed in *every* domain – education, private sector, corporate, government, medical, financial, automotive, infrastructure, military – if you can connect it or it stores data it must be protected



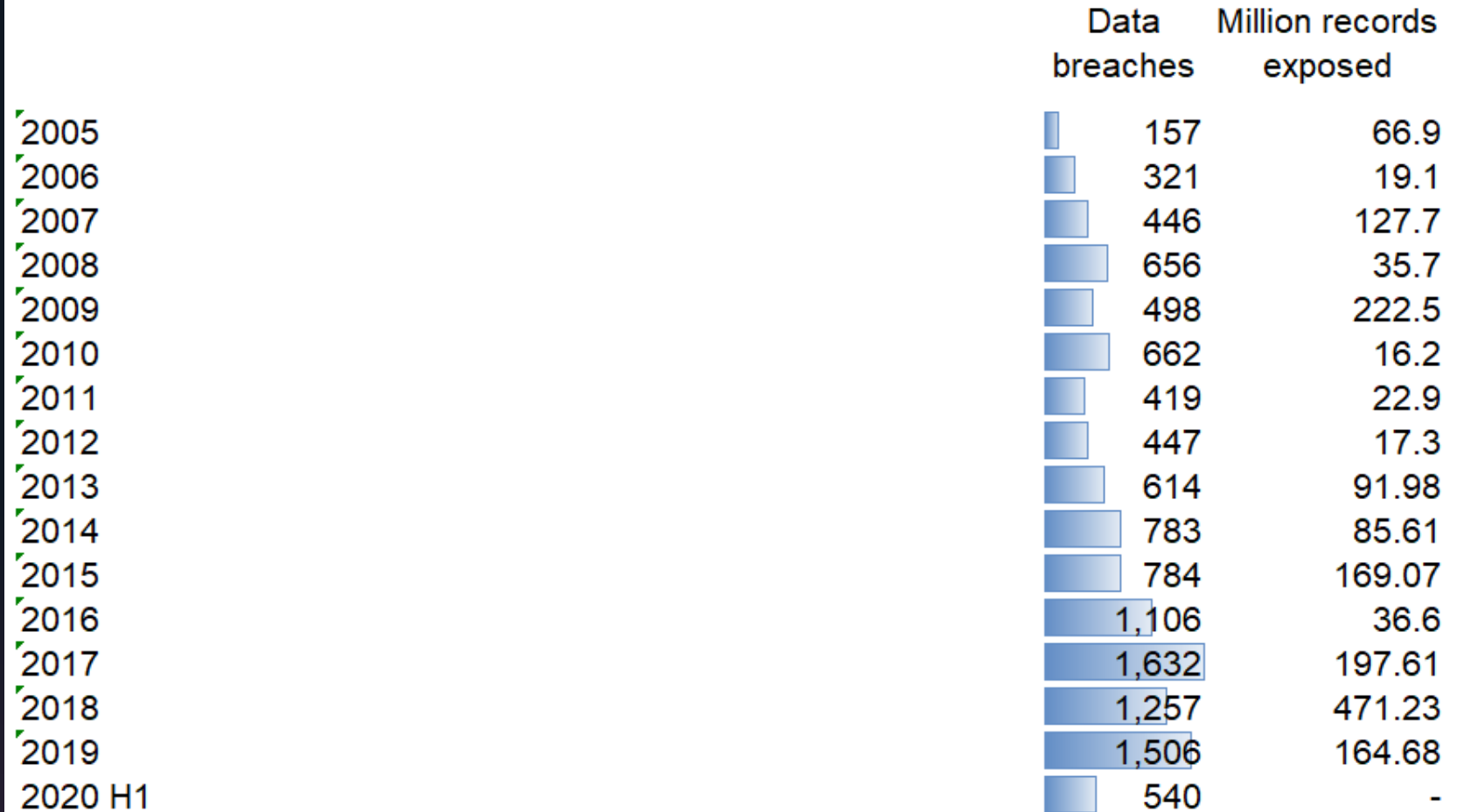
# Number of U.S. data breaches 2015 – 2019 by Industry

YEAR	BUSINESS	MED/HEALTH	EDUCATIONAL	BANK – CREDIT – FINANCIAL	GOVERN – MILITARY
2019	644	525	133	108	83
2018	575	369	78	135	100
2017	907	384	128	134	79
2016	497	373	97	51	72
2015	312	275	58	71	63



# Number of data breaches and exposed records in US from 2005 to 2020H1 (in millions)

**Cyber crime: number of breaches and records exposed 2005-**  
Annual number of data breaches and exposed records in the United States from 2005 to 1st half 2020 (in millions)



Source: Identity Theft Resource Center (2)



# JOB MARKET GLANCE

2021 – nearly 522,000 cyber job openings across country, in Arizona that number is ~14,813 job openings

## Job Openings

*Cyberseek.org & BLS*



Fastest-growing career areas nationally – 31% growth through 2029, over seven times faster than the national average job growth of 4%

## Job Growth

*BLS & Forbes.com*



Employers are looking for hands-on experience, certifications, soft skills and continual learners.

## Job Desires

*UCSD & Dice*







# CAREER FOR THE FUTURE

WHERE YOUR STUDENT FITS IN





# EMPLOYMENT OPTIONS

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## CURRENT FACTS

- 2020: “70% of organizations report a problematic shortage of cybersecurity skills” <sup>(3)</sup>
- “From October 2019 through September 2020, there were 166,000 openings for Information Security Analysts, but only 125,570 workers currently employed in those positions – an annual talent shortfall of 40,430 workers for cybersecurity’s largest job” <sup>(cyberseek.org) (3)</sup>

## THE FUTURE

- “3.5 million unfilled positions in the industry by 2021” This statistic is still holding. <sup>(4)</sup>



# CYBER MARKET OPPORTUNITY

The unemployment rate for cyber security is zero

3/4/2020. (cyberseek.org)

\$72,723

## Average Salary

Entry cyber security positions are well paying, there is something for every level of education! (6) Range 51k – 110k DOE and Certifications

31%

## Projected Job Demand

Cybersecurity may be the fastest-growing career field today, with the Bureau of Labor Statistics estimating that the field will grow 31% between 2019 and 2026 (average growth for all jobs is about 4%)

1/2021



# CURRICULUM

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## Your Students' BHS Options



# EDUCATION FLEXIBILITY

TAKING THESE COURSES AT THE HIGH SCHOOL LEVEL LETS YOUR STUDENT STAY AT THEIR HOME SCHOOL AND TAKE ADVANTAGE OF OTHER PROGRAMS OFFERED

1

## Entry Point(s)

Students may enter the cyber program at any point while in high school. The entry point is CIS 105, BCP 170 and BCP 270.

2

## Other Programs

Students may still participate in athletics, drama and other school clubs

3

## Special Options

Students who participate will have further opportunities through our CTE program, CTF competitions, and career development



# EDUCATION OPTIONS

OUR PARTNERSHIPS WITH CHANDLER-GILBERT COMMUNITY COLLEGE AND OTHER STATE CAEs (Centers of Academic Excellence (NSA)) PROVIDE YOUR STUDENTS WITH THESE TREMENDOUS OPPORTUNITIES

1

## Completer Track

This route is our two-year completer option. The student is taking two years of dual credit **technology** classes. At the end of the two years, students will have been prepared to take four different industry recognized certifications.

2

## Technology Only

At this level the student is committed four years. They are taking dual credit **technology** courses all four years. At the end, they will be prepared to take five different industry recognized certifications and their final class will be an on-site internship / industry project-based assignment.

3

## College Route

The final track is available to students who are college-bound. Students are taking dual credit **core** and **technology** classes. At the end of this option, students will be one semester from their AAS degree from CGCC.



# CERTIFICATION EXAMS

INDUSTRY LEVEL CERTIFICATIONS ALLOW YOUR STUDENT TO DEMONSTRATE THEIR ABILITIES TO POTENTIAL EMPLOYERS

1

## Completer Track - 2

IT Fundamentals      A+  
Network+            Linux +  
CSX

2

## Technology Only - 3

All prior listed certifications  
Security+  
PCEP (Python Certified  
Entry-level Programmer)

3

## College Route

All prior listed certifications  
Students will be one semester from their AAS degree from CGCC with transferable credit to universities





# PARTNERSHIPS

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CHANDLER-GILBERT COMMUNITY COLLEGE

Manny Hernandez



# Program Benefits

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- Earn an Associates Degree in Cybersecurity
- Seamless admission in the University of Arizona's Bachelor of Applied Science Degree
- Tuition Savings – Earn 75 credits through CGCC at an AFFORDABLE cost
- Remaining 45 credits through UofA online or CGCC location



# BHS → CGCC → U of A

## CHANDLER – GILBERT COMMUNITY COLLEGE

Chandler-Gilbert Community College		
<i>Associate in Applied Science in Cybersecurity, Certificate of Completion in Cyber Operations</i>		
Course	Course Title	Credits
ITS291	Computer Forensics Foundations	4
ITS292	Advanced Computer Forensics	4
ENG101	First Year Composition	3
ENG102	First Year Composition	3
*CRE101 or test exempt	College Critical & Evaluative Reading or Exemption by Assessment	0-3
MAT142	College Mathematics	3
Oral Com	COM100, 110, 225, or 230	3
HU	Any approved Humanities, Arts, & Design course	3
SB	Any approved Social-Behavioral Sciences course	3
SQ/SG	Any approved Natural Science course	4



# BAS REQUIREMENTS

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Additional BAS Requirements (to reach 75 credits)			
Course	Course Title	Credits	Grade
HU	Any approved Humanities, Arts, & Design course	3	
102, CLEP, or Proficiency	Second Language – First Semester	4	
102, CLEP, or Proficiency	Second Language – Second Semester	4	
1## or 2## level	Elective	1	



# COST OF CYBER PROGRAM

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Completer  
Track

Total # of Classes: 7 Dual Enrollment - \$1,785  
Year 1: \$ 765  
Year 2: \$1,020

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Four Year  
Track

Total # of Classes: 11 Dual Enrollment - \$2,805  
First two years: \$1,785  
Year 3: \$ 510  
Year 4: \$ 510

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College  
Bound

Total # of Classes: 11 Dual Enrollment - \$2,805  
Dual Enrollment Core Class Option: \$2,550 (10 classes)  
Total Credits: ~70                      Total Cost: \$5,355

# HOW TO GET INVOLVED

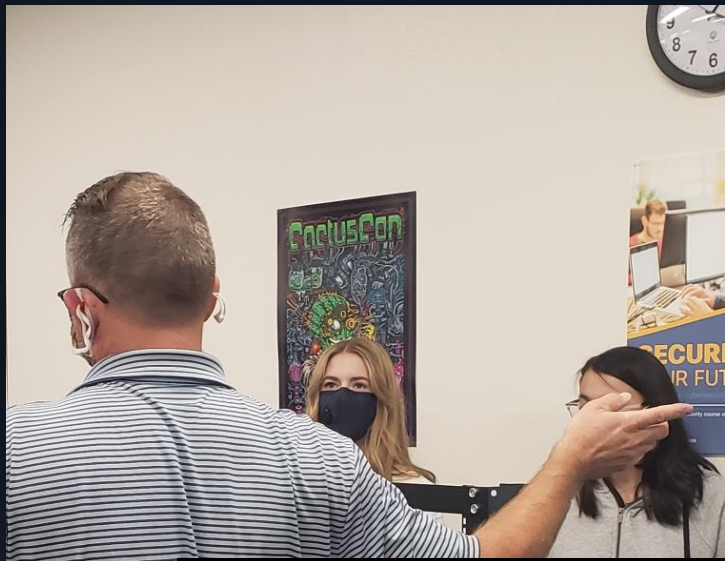
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HERE IS A SHORT LIST OF WAYS YOU CAN JOIN US

- Advisory Board
- Guest Speakers
- Volunteers for CTFs
- Tours at your place of employment
- Internship Opportunities
- Capstone Projects
- Tax Credit







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# WRAPPING UP

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Questions? Please type in the chat.

If we do not get to your question, we will answer after meeting is done and send out answers.



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# THANK YOU!

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State of Arizona

**Tim Roemer – CISO**

**Jennifer Pittman-Leeper, ESPAC  
Administrator**

Basha High School, CUSD

Chandler-Gilbert Community College

“In the final analysis, such considerations should be in the forefront of the minds of leaders all over the world because a nation’s cyber workforce is among its most precious strategic assets”

- Tom Wingfield, Deputy  
Assistant Secretary of Defense

# RESOURCES

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- (1) Number of Data Breaches: statista, January 2021, Original Source: ITRC 2019 End-of-Year Data Breach Report, page 2 (UPDATED)
- (2) Number of data breaches and exposed records in US from 2005 to 2020H1: Identity Theft Resource Center, Additional Info: US, Identity Theft Resource Center; 2005 – 2020H1, October 1, 2020 (UPDATED)
- (3) 2019-2020 stat: CSO from IDG, ESG Annual Survey (p.5), Jon Oltsik, ESG Senior Principal Analyst, August 21, 2020, 03:00 AM PDT, [website link](#), 13 January 2021 (UPDATED)
- (4) Future stat: Forbes Technology Council, Brian NeSmith, CEO & Co-Founder of Arctic Wolf Networks, August 9, 2018, 07:30 AM, [website link](#), 8 April 2019
- (5) Current stat: Forbes, Jeff Kauflin, Forbes Staff, March 16, 2017, 06:46 PM, [website link](#), 8 April 2019
- (6) Average Entry-Level Info Security Analyst Salary, Payscale, 2021, [website link](#), 13 January 2021 (UPDATED)
- (7) Job Market Glance stats: [What Are the Fastest Growing Cybersecurity Skills in 2021](#), Nov 1, 2020, [Job Openings in Cybersecurity](#): Jan 13, 2021 (Cyberseek.org), Bureau of Labor Statistics – [Occupational Outlook Handbook](#): 13 January , 2021, [Finding a Career in Cyber Security: tips and Resources](#), [Cyber Security Certifications and skills: What Employers Want](#), 5 November 2019 Nick Kolakowski; [10 Most Desired Traits for Cyber Security Job Candidates](#), 5 February 2018 Doug Olenick(UPDATED)





# CAREER OPTIONS – Ongoing Job Certifications are Encouraged (CISSIP), Work Experience and Masters Needed for Management

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Completer Track

Penetration (Pen) Tester  
Ethical Hacker  
Junior Linux Administrator / Network Administrator

IT Security Consultant  
IT Security Specialist

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Four Year Track

Security Analyst  
Vulnerability Analyst  
Computer Forensics Tech  
Linux Database Administrator

Security Engineer  
Cybersecurity Specialist  
Cybersecurity Analyst

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College Bound

Security Director  
Security Manager  
Security Auditor

IT Project Manager  
Security Architect  
CISO – Chief Info Security Officer

