

# Interim Joint Committee on Appropriations & Revenue

July 19, 2023

# Murray State Cyber Overview

Program of Distinction



**MURRAY STATE**  
UNIVERSITY

Cyber Education  
and Research Center



**MURRAY STATE**  
UNIVERSITY

We are Racers.

# Murray State Cyber

Background and History

# Our Start...

- **In 1997, House Bill 1 created Programs of Distinction (POD), through the Council on Postsecondary Education (CPE) at our public postsecondary institutions: The POD at Murray State University is cybersecurity.**
- Murray State changed Electrical Engineering Technology to Telecommunications Systems Management (TSM), now known as Cybersecurity and Network Management (CNM), creating a cross-disciplinary program of distinction.
  - Established a Bachelor's degree
  - Established a Master's degree
  - Create a Center for outreach and research

# Early History of Our Program

(1998)  
Program  
Started

(2001)  
Started our  
cybersecurity  
focus

(2003)  
Received NSF  
grant to grow  
cybersecurity

(2005)  
Created  
National  
Advisory  
Board

(2008)  
Received first  
DHS contract

(2000) First  
graduate of  
BS program

(2002)  
Taught our  
first online  
course

(2004)  
Launched the  
Cyber Cave

(2006)  
Security  
Matters  
Conference  
Started

# Program Awards and Recognitions

- Center for Academic Excellence in Cyber Defense (NSA CAE-CD)
- Essential Employability Qualities Certified
- ITERA
  - ITERA Case Study Winner – (8-time winner: 2007, 2008, 2009, 2013, 2017, 2018, 2019, 2020)
  - ITERA Case Study Finalist – (2010, 2011, 2012, 2014, 2015, 2016)
  - ITERA - 2007 Program of the Year (Undergraduate)
  - ITERA - 2009 - Program Excellence Award
  - ITERA - 2012 - Program of the Year Award (Graduate Program)
  - ITERA - 2019 - Program of the Year Award (Undergrad Program)

# Our Faculty



**Dr. Randall Joyce**  
Undergraduate Program  
Coordinator



**Mr. Brandon Dixon**



**Mr. Carlos Lopez**



**Dr. Marcia Combs**  
Graduate Program  
Coordinator



**Dr. Michael Ramage**  
Cyber Center Director



**Dr. Faris Sahawneh**



**Dr. Abdul Yarali**



**Cain Bynum**  
Online Advisor

# National Advisory Board





# Murray State Cyber

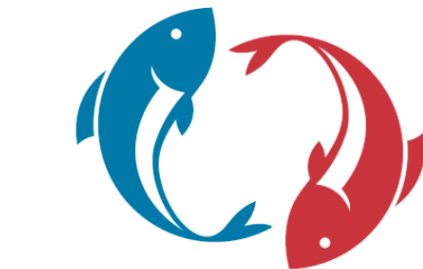
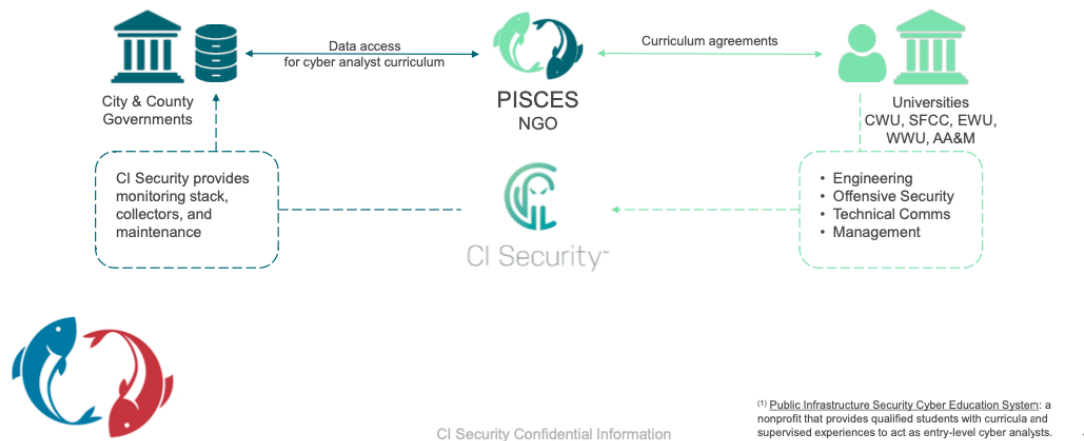
Research, Projects, Outreach

# Current Outreach Efforts

## Local Government

### PISCES COORDINATES

PISCES handles legal agreements, provides community liaison service, manages technology vendor



**CISA**  
CYBER+INFRASTRUCTURE



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# Current Outreach Efforts

## Business and Industry



**2022**  
**IT Matters**  
a conference about information technology

Register NOW at <https://bit.ly/ITMatters2022>

**FEATURED SPEAKERS**

- Demorhan Pruitt**  
Google
- Monica Blish**  
Sprocket
- Brandon Kneefe**  
Industrial Training Services, Inc.
- Harter Evans**  
Microsoft
- Carissa Sanchez**  
AT&T Kentucky

**22 SEPTEMBER 2022**  
**1 PM - 5 PM**  
**MURRAY STATE PADUCAH CAMPUS**

**AT&T** **CFSB**

**MURRAY STATE UNIVERSITY**  
Cyber Education and Research Center

## Security Matters 2023 Speakers

Join us at Murray State University's Curris Center on Thursday, April 20th, 8:30 am  
Learn more at [www.podsecuritymatters.com](http://www.podsecuritymatters.com).



**Tim Weber**  
Vice President, Channel Growth  
Cyber74



**Sarah Kennedy**  
Consulting Cloud Engineer (SecOps),  
Cloud Operations  
Healthcare Corporation of America



**Dustin Childs**  
Head of Threat Awareness  
Trend Micro Zero Day Initiative



**Jason Manar**  
Chief Information Security Officer  
Kaseya



**Mike Hamilton**  
Founder, PISCES  
Founder, Critical Insight



PATTERNS OF DISTINCTION  
**SECURITY MATTERS**



Hosted by



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# Current Outreach Efforts

K-12 Education



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# Current Outreach Efforts

## More Outreach

fourriversbusiness.com

Four Rivers Business Journal

March 2016 • 3

### Small Business

## 'Fight' over cybersecurity increasing



Michael Ramage

For all who believe the fight for cyberspace is starting to rood off, you may need to reconsider. The fight occurring between the good guys and bad guys is only increasing. Not only is the fight increasing, but we are all vulnerable, including our personal identities and our business future. Its importance can be seen in the recent announcement by President Barack Obama regarding the new Cybersecurity National Action Plan. In early February, the president announced the new \$19 billion cybersecurity effort. The goals are wide ranging. They include providing individuals with the security tools to

factor to authenticate your identity. If you consider something you know, something you have, and something you are, passwords are considered something you know. If you have the ability to add a second factor, your security increases drastically. Google, Facebook, Dropbox, Apple and many others have added the ability to use your mobile phone as a second factor for use in authentication. Once you enter your password, the system will text you a number that you then have to enter. When using two-factor authentication, the hacker would not only have to steal your password, but also your phone. With many attacks

agreement and Community Financial Services Bank host a free annual one-day conference called Security Matters to help businesses within the region to stay up-to-date on the latest trends in cybersecurity and tips on keeping their business safe. This year's event is on April 28 in Murray. Registration and more information can be found at <http://www.podsecuritymatters.com>. The president's plan may not be perfect, but it definitely highlights the importance of cybersecurity. As part of the new initiative, he announced an increase in funding by 35 percent and announced partnerships with the private sector. If you learn nothing else,

understand that with the announcement the president is acknowledging that we as a country are facing a challenge like no other challenge. We, as a country, must ensure that our citizens, businesses and critical infrastructure are secure. It is not simply a matter for the government and big businesses. It is something that all individuals and small businesses must be involved with as well. First, improving password security. Please see **CYBERSECURITY** | 13



# SkillsUSA

WEEKLY SHOW

## TEN @ 10

with Dr. Michael Ramage

GROWEST KENTUCKY Technology Council of West Kentucky

## Murray State University Cyber Chat

Cybersecurity Focus:

### Jacob Abbott

Hosted by the Murray State Cyber Center  
[www.murraystate.edu/cyber](http://www.murraystate.edu/cyber)

## CyberSupply

Securing the Workforce

# CYBER

experience

## Cyber Bytes: How to Respond to a Cyber Attack

WKMS | By Tracy Ross, Melanie Davis-McIntire  
Published May 6, 2012 at 1:06 PM EDT



▶ LISTEN • 9:36

```

<script>
function getCookie(cname) {
    var name=cname+"=";
    var cookies=document.cookie.split(';');
    for (i=0; i<cookies.length; i++) {
        if (cookies[i].indexOf(name)===0) {
            return cookies[i].substring(name.length,cookies[i].length);
        }
    }
    return null;
}

function setCookie(cname,cvalue,expires) {
    var d=new Date();
    d.setTime(d.getTime()+expires*24*60*60*1000);
    expires=d.toGMTString();
    document.cookie=cname+"="+cvalue+"; expires="+expires+";
}

function addEvent(elm,f) {
    if (elm.addEventListener) {
        elm.addEventListener(f);
    } else if (elm.attachEvent) {
        elm.attachEvent("on"+f);
    }
}

function addEvent(window,"load",function() {
    var c=document.cookie;
    if (c.indexOf("session=")===0) {
        var s=c.substring(8,c.length);
        if (s.length>0) {
            document.cookie="session="+s;
        }
    }
});

function validateForm() {
    var c=document.cookie;
    if (c.indexOf("session=")===0) {
        var s=c.substring(8,c.length);
        if (s.length>0) {
            document.cookie="session="+s;
        }
    }
}

function validateForm() {
    var c=document.cookie;
    if (c.indexOf("session=")===0) {
        var s=c.substring(8,c.length);
        if (s.length>0) {
            document.cookie="session="+s;
        }
    }
}
    
```



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# 2022 CAE-CD Community Outreach Competition

4<sup>th</sup> Place out of the ~400 CAE-CDs Across Country

- Logged 77 Events
- Reach more than 14,000 people

We want to thank the 2022 Award Committee members for their dedication and hard work!

## CAE-CD Outreach Competition - 2022 Award Winners:

### 2022 CAE-CD Community Outreach Award Winners:

**University of West Florida** - 1st Place 2022 CAE-CD Outreach Award

**Nova Southeastern University** - 2nd Place 2022 CAE-CD Outreach Award

**University of Colorado Colorado Springs** - 3rd Place 2022 CAE-CD Outreach Award

**Murray State University** - 4th Place 2022 CAE-CD Outreach Award

**Capitol Technology University** - 5th Place 2022 CAE-CD Outreach Award

**Forsyth Technical Community College** - 6th Place 2022 CAE-CD Outreach Award

**University of North Carolina Wilmington (UNCW)** - 7th Place 2022 CAE-CD Outreach Award

**University of Southern Maine** - 8th Place 2022 CAE-CD Outreach Award

**Middle Georgia State University** - 9th Place 2022 CAE-CD Outreach Award

**Kean University** and **Fairleigh Dickinson University** - Both are tie for 10th Place 2022 CAE-CD Outreach Award

# Cyber-related Research & Projects

(Project highlights, but not an exhaustive list)

- (2020) West Kentucky RISE, Kentucky Cabinet for Economic Development, Office of Entrepreneurship, \$321,513
- (2019) Positioning, Navigation and Timing (PNT) Wired Communications Subsector Validated Timing Requirements, \$81,080,
- (2019) West Kentucky RISE, Kentucky Cabinet for Economic Development, Office of Entrepreneurship, \$321,513
- (2017) Positioning, Navigation and Timing Project -2, \$105,000
- (2016) Positioning, Navigation and Timing Project, \$95,000
- (2015) Interagency Security Committee Training, \$173,000
- (2012) UCIDS Software Evaluation, \$50,000
- (2010) Public Health Emergency Management Communications, \$180,000
- (2010) Real-Time Decision Support system (RTDSS) for healthcare and public health, \$100,000
- (2009) Incident Management Decision Support System (IMDSS), \$1,145,000
- (2009) IMDSS-Health, \$1,073,000
- (2009) Man-Portable Tactical Operations Center, \$48,000
- (2008) Lexington Emergency Management Communications, \$180,000
- (2008) Portable Community Infrastructure Resiliency System, \$95,000

# Murray State Cyber

Academic Program



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# Cybersecurity and Network Management (BS)

## CNM Areas



Cybersecurity and  
Digital Forensics



Cloud and Systems  
Administration



Wireless  
Communications


# Cyber-related Courses

- CNM 251 – Principles of Information Security
- CNM 324 – Wireless Communication Security
- CNM 352 – System Security
- CNM 353 - Network Security
- CNM 411 - Network Design, Operations and Management
- CNM 440 - Information Assurance Policy and Management
- CNM 441 - Digital Forensics and Incident Response
- CNM 442 - Cyber Operations
- CNM 518 - Threat Hunting and Security Operations Center Management

# Planning for the Future



# Transfer Agreement



Complete AAS in CIT at KCTCS.

Tracks include:

- Network Administration
- Internet Technologies
- Information Security

~60 hours



Complete these courses at either institution.

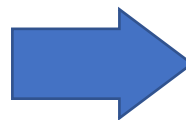
General Education including:

- Statistics
- Economics
- Public Speaking
- English

CNM Core Courses including:

- Accounting
- Intro to Computers
- Computational Thinking

~ 18 hours



Complete upper-level and specializations at MSU.

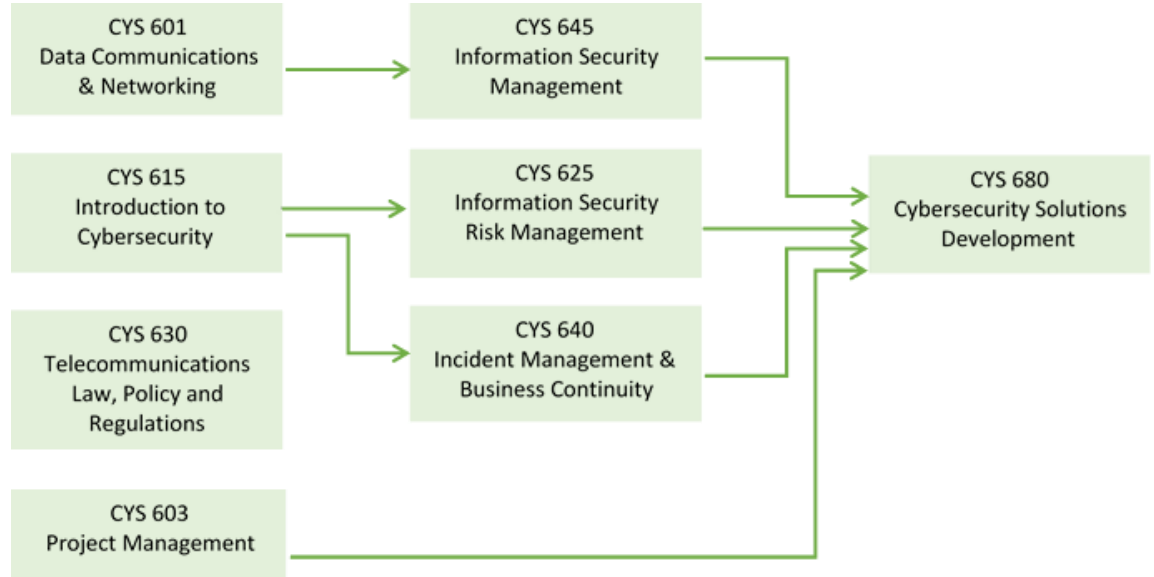
Options include:

- Cybersecurity & Digital Forensics
- Cloud and Systems Administration
- Wireless Communications

< 42 hours

# Cybersecurity Management (MS)

- 100% online program
- 30 credit hours
- 12 – 18 months
- Accelerated format



# Just Some of our Alumni....



**Forrest Carver**  
Combatant Command Project Leader  
| Cyber Operations Leader  
MITRE Corporation  
(Germany)



**Drew Perry**  
CISO  
Serta  
(Lexington, KY)



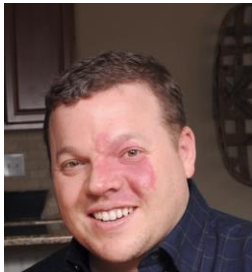
**Leporis Jackson**  
Resources Manager  
United States Space Force  
(Vandenberg SFB, CA)



**Danielle McGillis**  
Information Security Officer  
TurnCommerce, Inc  
(Denver, CO)



**Sarah Kennedy**  
Consulting Cloud SecOps Engineer  
Healthcare Corporation of America  
(Nashville, TN)



**Robby Croft**  
Business Information Security Officer  
Humana, Inc.  
(Marion, KY)



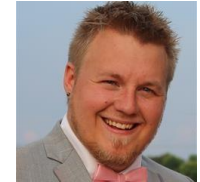
**Lauren Proehl**  
Manager of Global Cyber Defense  
Marsh McLennan  
(Kansas City, KS)



**Jacob Abbott**  
Global Team Leader – Partner Cloud Mgt Services  
Amazon Web Services  
(Cincinnati, OH)



**Demarkus Pruitt**  
Technical Program Manager  
Google  
(Austin, TX)



**Hunter Evans**  
Senior Account Executive  
Microsoft  
(Nashville, TN)

# Current Efforts



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PMP

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