



Oregon State University
College of Engineering

ORTSOC – The Nation's First Cybersecurity
Teaching Hospital™

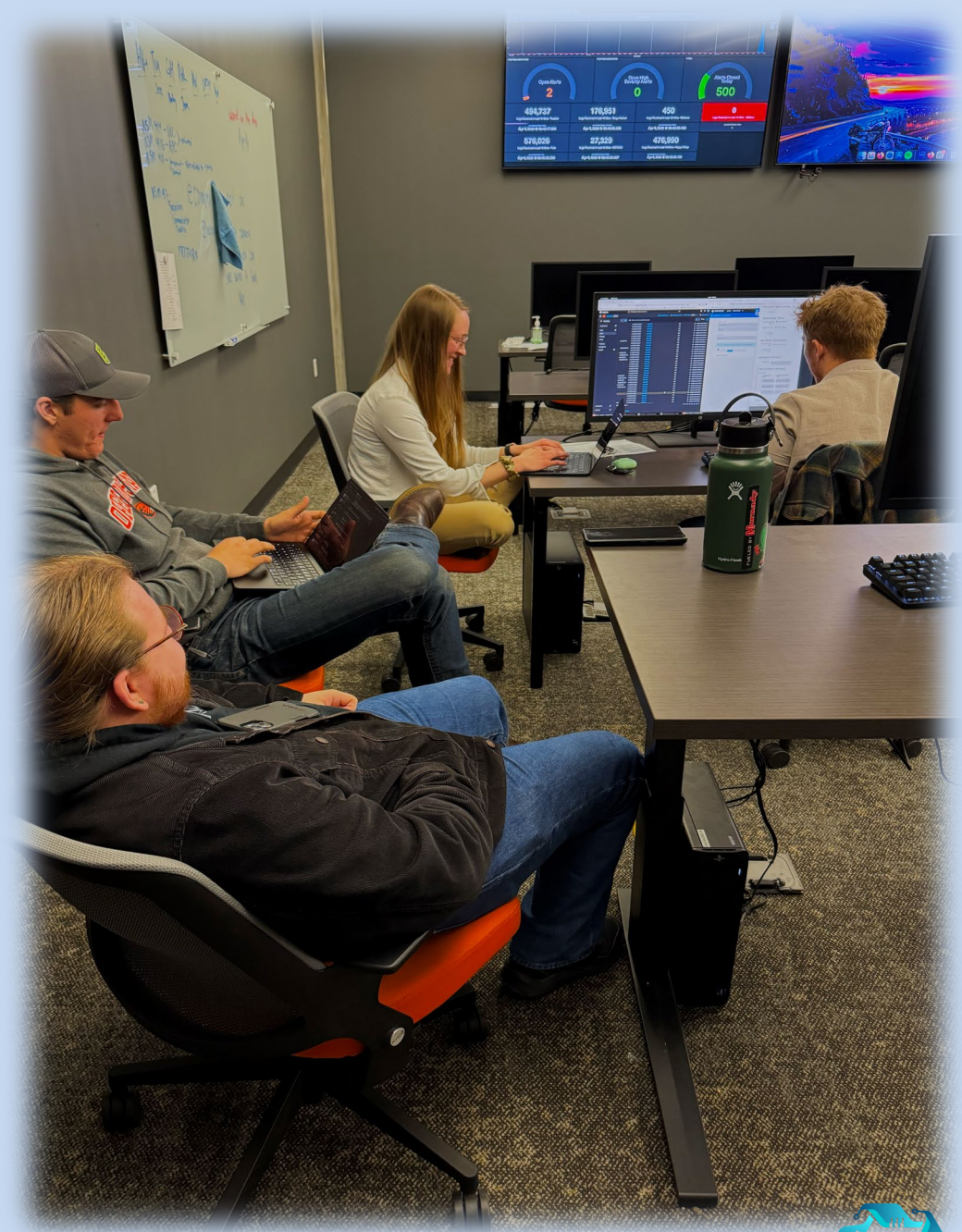
ORTSOC: A CLINICAL ROTATIONS APPROACH TO PROFESSIONAL CYBERSECURITY EDUCATION

Dr. Rakesh Bobba
Associate Professor, School of EECS
Associate Director, ORTSOC and OCCoE

Joint Committee On
Information Management and Technology
Oregon State Legislature
May 30th 2025

Meeting Needs...

- Experiential learning is better
- The underserved are struggling
- Experienced employees
- Existing models for training highly skilled professionals
 - Clinical rotations



ORTSOC: Trifold Mission

- Workforce Development
- Service
- Engaged Innovation & Scholarship



ORTSOC History



ORTSOC Technology



- ELK Stack
 - Elastic SEIM
 - Logstash
 - Kibana
- Suricata
- Zeek
- Yakabod
- And more...



UNDERGRADUATE CURRICULUM



- BS Computer Science - Cybersecurity
- Two tracks:
 - Practicum
 - Project (traditional capstone)
- Practicum:
 - 17 credit hours during senior year – 3 terms
 - 10-12 hours per week @ ORTSOC (+ 2hr Standup)

ORTSOC Clinical Rotations and Services

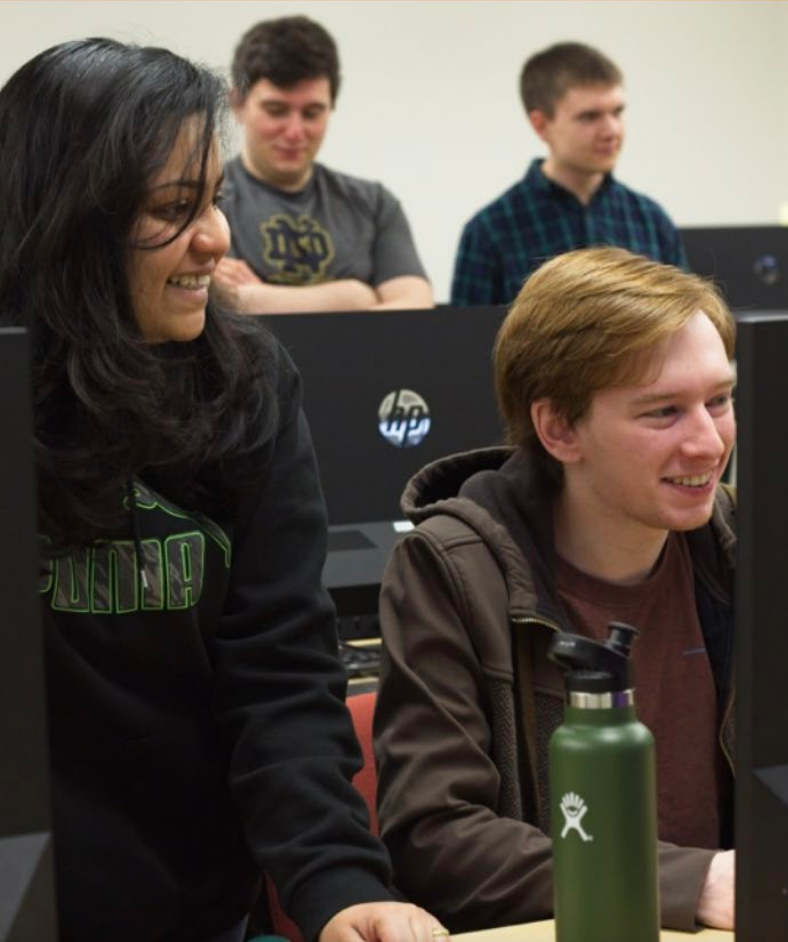
Network Security Monitoring and
Incident Response

Assessment services:
Security Maturity
Risk
Onboarding
Penetration Testing

- Clinical Rotations:
 - Network Security Monitoring and Incident Response
 - Security Engineering
 - Threat Intelligence
 - Threat Hunting
- Security Assessments
- Penetration Testing



STUDENT FEEDBACK



"This is quite literally the best and most fun class I have had the pleasure of taking at OSU. Experiencing the environment of a security operations center firsthand is an incredibly effective way of teaching a wide range of skills that will help our future careers regardless of where we end up in the industry."

"This course offered great hands-on experience that even my friends in industry thought was amazing."

"A very hands-on class that allowed me to learn a TON more about IR and SOC operations."

"Hands-on learning has always been the best way for me to learn and that is what this class primarily is."

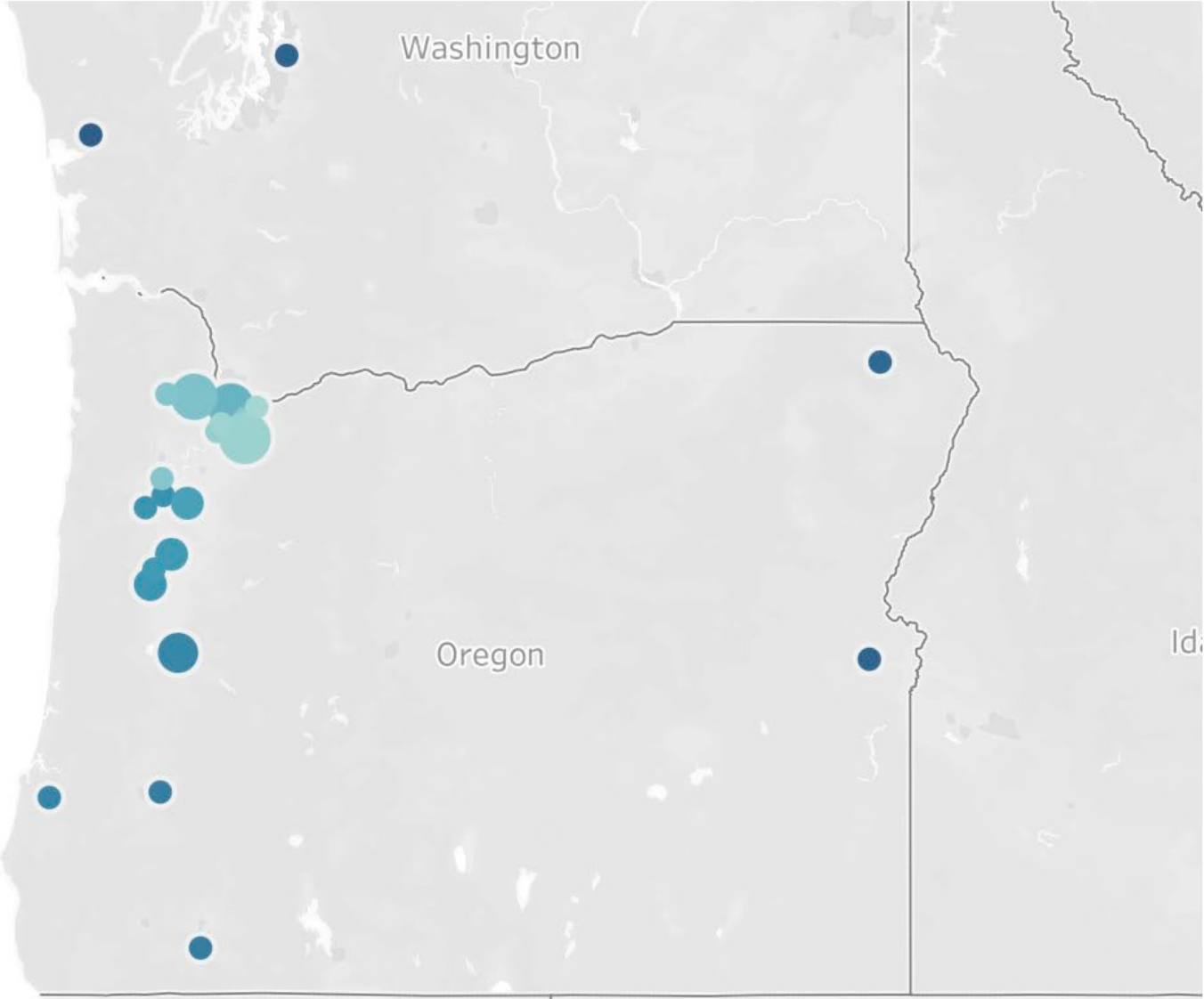
"The faculty and TAs are incredible and very fun to work with, and the amount of hard work and long hours that have gone into making this class a reality is nothing short of incredible..."

Organizations We Serve

- Underserved Public Organizations
 - Small to mid-sized cities
 - Counties
 - Service Districts
- Higher Education Institutions
- Currently Serving 13+ organizations
- Consortium Model



ORTSOC Impact (2025)



Clackamas County	7
Washington County	6
Multnomah County	5
Benton County	3
Lane County	3
Linn County	2
Marion County	2
Polk County	2
Washington State	2
Coos County	1
Douglas County	1
Jackson County	1
Malheur County	1
Wallowa County	1
Yamhill County	1

Client Feedback

"The ORTSOC program provides us a knowledgeable and capable additional layer of security that is invaluable to our small jurisdiction. Having support from a regional partner, knowing someone is monitoring, and providing real-life experience to the future IT generation goes along with our jurisdiction's values. The ORTSOC partnership benefits everyone involved!"

Bates Russell, Director of Information Service, City of Tualatin, Oregon

"We really appreciate ORTSOC and being a part of this program. We serve a lot of economically disadvantaged youth in the schools we support and don't have the personnel or resources to properly monitor cyber security in our IT resources. We are very grateful for ORTSOC to fill this need. Dave and his team have been great to work with in rolling out their services and we hope to work with them for a long time to come."

Randy Seals, Director of Technology, Malheur Education Service District



PEOPLE

- 9 Faculty Members
 - Combined professional experience of >75 years
- 3 Graduate Assistants
- Student employees during breaks





Cost of ORTSOC Operation

- Annual Budget ~\$2M
 - ~2/3 OSU (~\$1.4M)
 - ~1/3 State and Federal
 - State (OCCoE): ~\$500K
 - Federal: ~\$100K
- Largest Category: Personnel



ORTSOC Impact

2,022,622,900,000

**EVENTS COLLECTED BY ORTSOC
SENSORS**

480

**SECURITY EVENTS ANALYZED BY
ORTSOC STUDENTS**

24

**UNIQUE SECURITY INCIDENTS
RESOLVED BY ORTSOC STUDENTS**

25,980+

HOURS OF TRAINING*

9

ORTSOC FACULTY

547

**STUDENTS ENROLLED IN NEW
CYBERSECURITY OPTION (SO FAR...)**

*(based on number of hours per student spent in practicum; includes hours through Spring Term 2024)

90

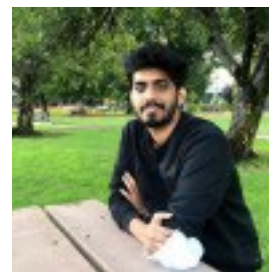
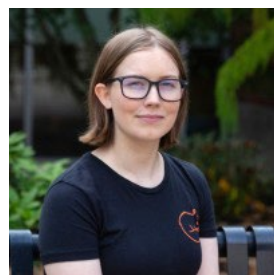
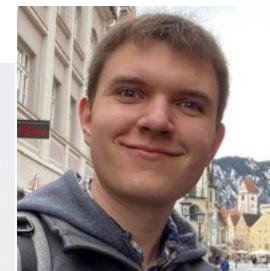
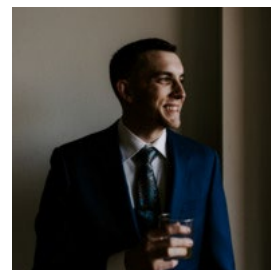
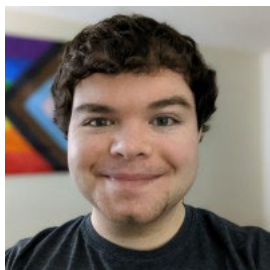
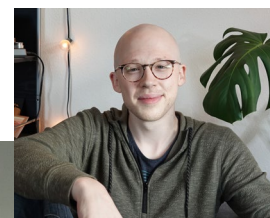
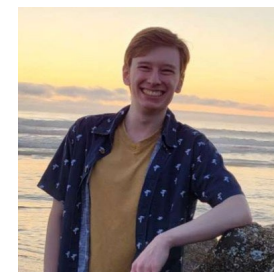
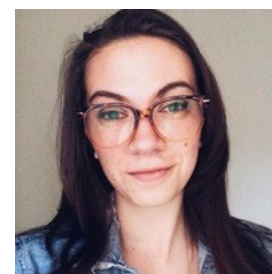
**STUDENTS
(75 UNDERGRADUATE, 15
GRADUATE)**

\$5.35 M

**ATTRACTED EXTERNAL
SUPPORT**

1ST

**CYBERSECURITY TEACHING
HOSPITAL IN THE US
(AND POSSIBLY THE WORLD)**



Lessons Learned and Next Steps

- Expensive
- Clients can't afford to pay
- Takes time ...
 - Buy-in from University Leadership at all levels
 - Facilities & Staffing
 - Curriculum approval
 - Navigating institutional landscape/relationship building
- Targeted Grad Degree with ORTSOC integration
- Expanding services and hours
- Serving more organizations
- Managing 100%+ growth in students
 - 33 in AY24 → 70+ in AY25 (expected)



Thank you!

Rakesh Bobba

Associate Professor, School of EECS

Associate Director, ORTSOC

Associate Director, OCCoE

(rakesh.bobba@oregonstate.edu)

Dave Nevin

Associate Professor (Practice), School of EECS

Director, ORTSOC

(dave.nevin@oregonstate.edu)