



Oakland University Board of Trustees

President's Report

October 3, 2022

Agenda

I. OU PRIDE

Ora Hirsch Pescovitz, President

II. RESEARCH UPDATE

David Stone, Vice President, Research



Developments

- **Michigan Achievement Scholarship**
 - Up to \$5,500 for eligible students
- **Capital Outlay**
 - Science Complex (\$30M state funds, \$10M bonds)
- **THE BEST**
 - Transforming Health Education By Elevating State-of-the-Art Teaching learning & practice



OU Forward: Reconnecting



Sept. 13: Gathering of more than 250 students, faculty and staff at the Oakland Center.

The goal: To reconnect after two-and-a-half years of pandemic restrictions.

Campus is alive: New Student Convocation, OU Welcome Week, Faculty Welcome at SST, Leadership Day, Saudi Student Association Celebration, among others.

Golden Grizzlies Saturdays

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Members of the Oakland University community show their OU Pride on “Golden Grizzlies Spirit Saturdays.”

Community members build school pride and can submit photos in OU Golden Grizzlies gear for a chance to win OU swag.

Email photo to: social@oakland.edu

Leadership Day



September 9th gathering of more than 100 OU faculty and staff who completed Leadership Academy in the last seven years.

“Leadership Day” focused on developing leadership capabilities, and addressing projects that will foster a more dynamic work environment and culture.

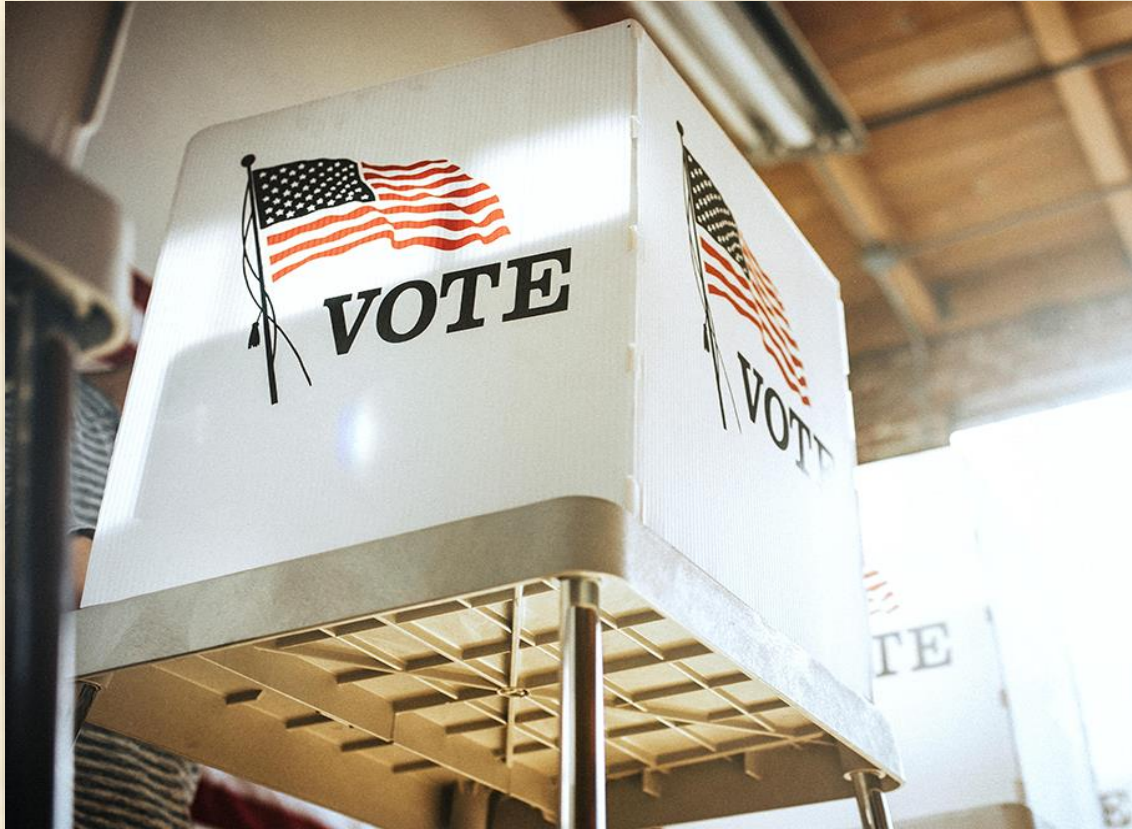
Leadership Day



“Leadership Day” was led by Professor Greg Thrasher and Professor Michelle Hammond from OU School of Business Administration.

Recommendations on ways to enhance campus culture will be submitted to the Cabinet and President.

OU Among Best Colleges for Student Voting



Oakland University has been named to the 2022 Washington Monthly Honor Roll for Best Colleges.

The distinction spotlights higher education institutions that go “above and beyond” in turning students into engaged citizens.

OU is among 230 schools nationwide that received recognition.

Special appreciation to Professor Dave Dulio for leading student voter education on campus and building public awareness as director of OU’s Center for Civic Engagement.

Student Success Center

New Student Success Corridor re-imagines engagement throughout the student life cycle.

- Academic Success Center
- Career Services Center for Multicultural Initiatives
- Office for Dean of Students
- Disability Support Services
- Enrollment Management
- First Year Advising Center
- Golden Grizzlies Pantry
- Office of Student Involvement
- Office of the Registrar
- Orientation and New Student Programs
- Student Financial Services
- Student Technology Center
- Gender and Sexuality Center
- Undergraduate Admissions



MICHIGAN

Michigan's brain drain: Which colleges lose the most graduates and why they leave



Hannah Mackay
The Detroit News

-- Detroit News, Sept. 19, 2022

Top Universities Where Graduates Remain in Michigan

1. Oakland University: 86.38%

2. UM Dearborn: 85.47%

3. Saginaw Valley State: 84.39%

4. UM Flint: 81.36%

5. Wayne State: 81.25%

6. Grand Valley State: 78.63%

7. Ferris State: 76.81%

8. Eastern Michigan: 76.14%

9. Lake Superior State: 70.96%

10. Western Michigan: 69.13%

Career Fair



- Career Services hosted a two-day Career Fair, Sept. 27-28
- More than 200 employers from business, government, nonprofit, healthcare, automotive, engineering and defense
- Career Services works with students prior event to practice their “job pitches.”
- OU graduates are hired into positions that pay above the state and national average.

Winning Tradition



The Men's Soccer Team won the 2021 Horizon League regular season and tournament championship.

Winning Tradition



**The Women's Softball Team
won the 2022 Horizon League
Championship.**

Winning Tradition

OAKLAND
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**The OU Women's Golf Team
won the 2022 Horizon League
Championship**

Winning Tradition



Last Spring, OU's Swimming and Diving Team won their ninth consecutive Horizon League Women's and Men's titles.

Remarkably, the men's and women's teams have won a league championship for the last 44 and 28 consecutive years, respectively.

Congratulations to Coach Pete Hoveland.

Winning Tradition



Oakland student-athletes are winners on the field, and in the classroom.

OU student-athletes graduation rates exceed the Oakland University Graduation Success Rate.

Sustainability Awareness Month



Building awareness of the multi-layered approach to creating a sustainable campus, community and world.

Oct. 4: Student, Staff & Faculty Rally

Panel discussions on “Why sustainability matters?” and “Confronting Climate Change: A Conversation with Oakland County Sustainability Leaders”

Research Office

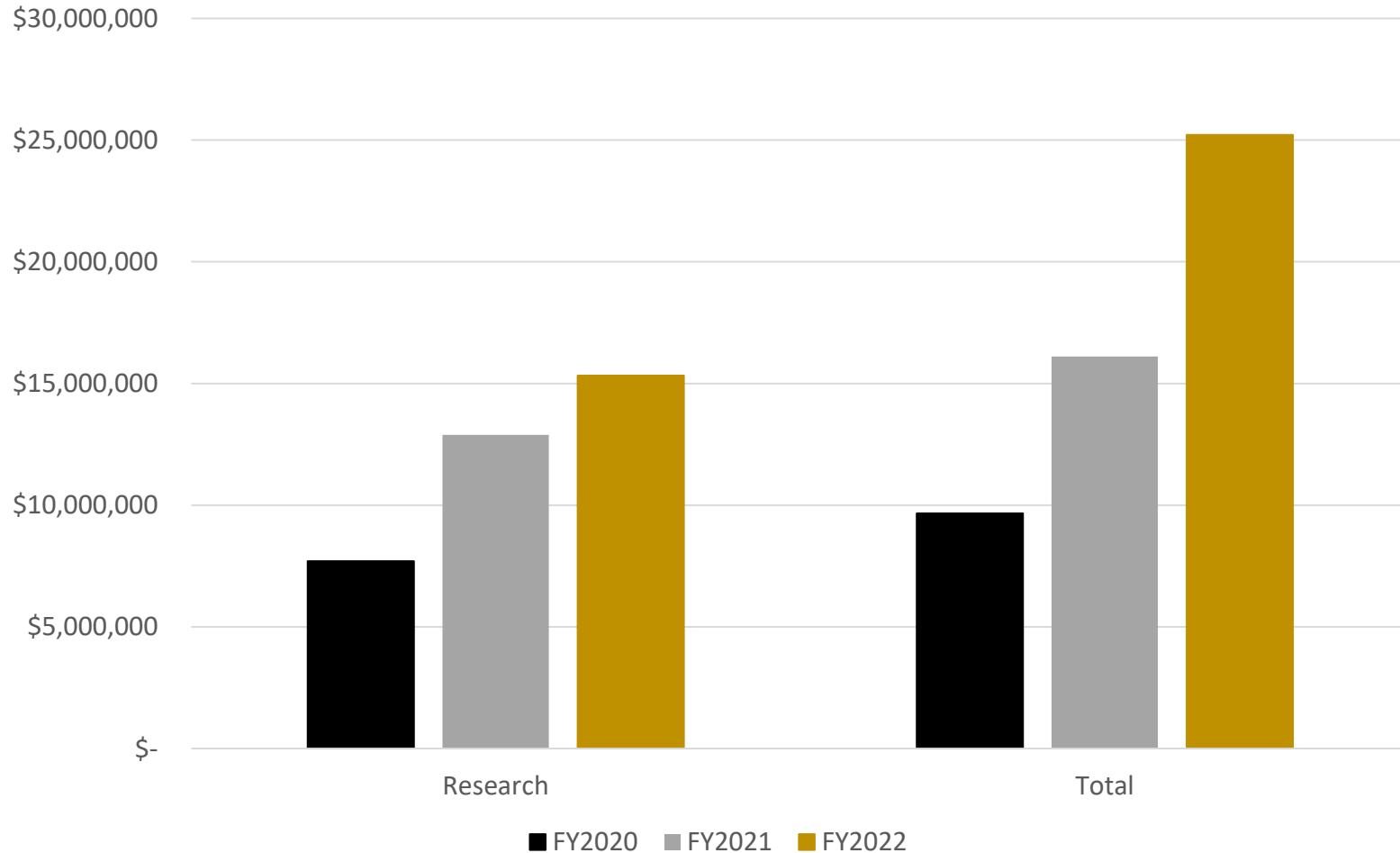
External Funding Report

David A. Stone, PhD
Vice President for Research

What Research Means for OU

1. **Faculty Success:** Attracting and retaining high quality **faculty**
2. **Student Success:** Supporting **undergraduate** recruitment, retention and completion; more competitive in the job market and graduate school placement
3. **Student Success:** Supporting **graduate** programs where students need funded research experiences for career placement
4. **Engagement Success:** Supporting **community engagement** (e.g., Carnegie designation) and **industry relations**
5. **Supporting fund raising**

External Funding FY20 to FY22



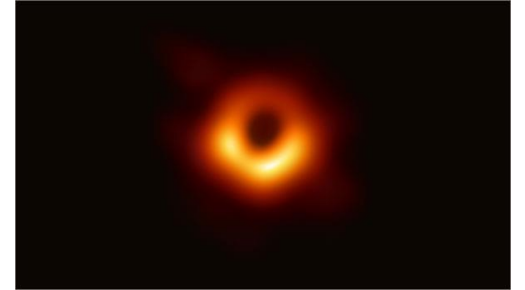
- **250% increase** in Total Funding, FY20 to FY22!
- **200% increase** in Research Funding, FY20 to 22!
- Average award size:
 - FY22: \$271,000
 - FY20: \$ 96,000

1. Hire successful mid-career faculty to jumpstart research and add seasoned mentors to the faculty
2. Leverage Research Development and PI Academy to enhance capacity of existing and early career faculty
 - **PIA grads have added \$13.3M over the last 4 years; more than 40:1 ROI**
3. Expand grant-seeking beyond research grants (instructional support, programmatic funding, traineeships and targeted scholarships)

Research Highlights

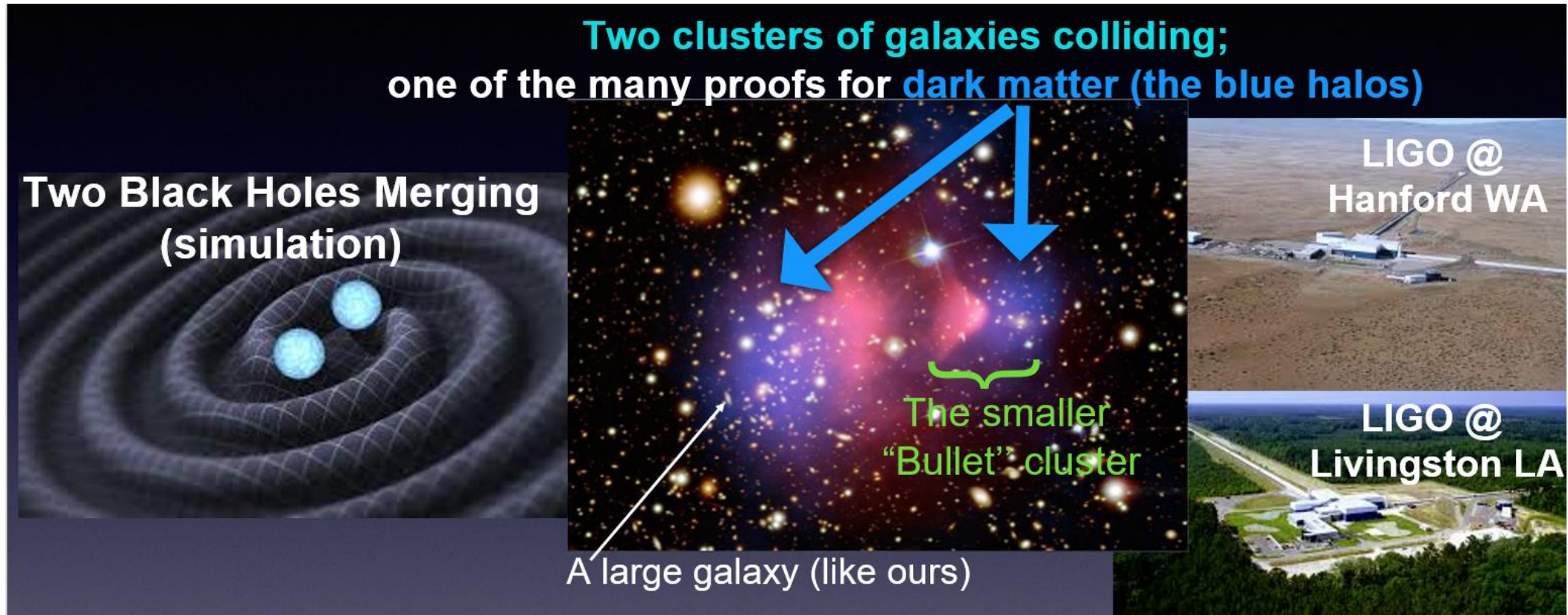
Black holes, the Big Bang and Gravitational Waves

- “Studies of Singularities, Black Holes and Gravitational Radiation” (NSF grant PHY-2102914, \$150,000)
- Includes computer simulations of:
 - gravitational collapse and the formation of black holes
 - the very early universe near the time of the Big Bang to understand the minuscule variations in density that ultimately become stars and galaxies
 - times before the Big Bang to understand how the Big Bang happened
- Studies of gravitational wave “memory,” a residual effect that remains after the gravitational wave has passed



Dark Matter Primordial Black Holes under the scrutiny of LIGO's observations

\$150,000 from the National Science Foundation (grant 2207912); Sept 2022 – Aug 2024

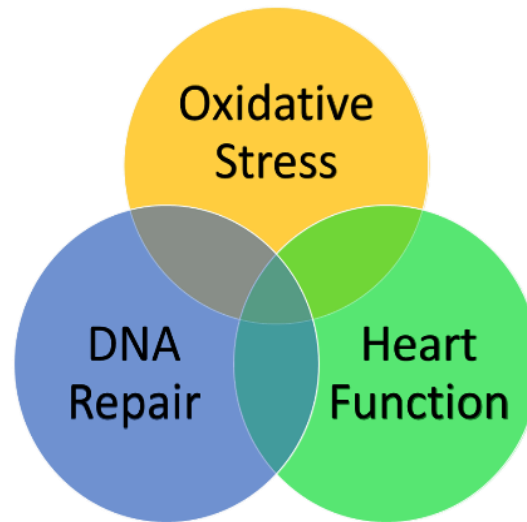


We work to make gravitational-wave observations by the Laser Interferometer Gravitational-wave Observatory (LIGO) and future detectors, a part of the toolset in searching for the nature of dark matter and in understanding the early universe.

CAREER: Molecular Recognition of 8-oxoguanine Modified G-Quadruplexes by the FANCD1 Helicase and the REV1 Polymerase

Research

- Explore how environmental toxins (exposure to sun, smoke, stress) damage DNA
- Understand how damaged DNA structures are recognized and repaired in human cells
- Determine the effects of oxidative (environmental) DNA damage on heart contractile function
- Team members: Colin Wu, Ryan Summers (North Dakota), Darlene Grooms (OU)



CAREER: Molecular Recognition of 8-oxoguanine Modified G-Quadruplexes by the FANCD1 Helicase and the REV1 Polymerase

Education

- Incorporate “real research” into the laboratory curriculum
- Increase access of research to OU Chemistry and Biochemistry majors (~200 students)
- Students use AI and 3D modeling to predict how protein mutations may influence their structure and DNA binding
- Students test their predictions by purifying the mutant proteins and measuring their affinities for DNA

Outreach

- Provide high school teachers and students with convenient access to research equipment
- Demonstrate genetic testing on-site (lactose tolerance) in high school science classrooms
- We now have 8 Bento Lab instruments thanks to support from the NSF and the Research Office



BCM 4257 students



Adams HS



Stoney Creek HS



Social/Health Psychologist



Colorectal screening fear-reduction and racially-targeted norm messaging entreaties to increase colorectal cancer screening rates among African Americans

(PI) NIH-NIMHD : R21 MD016506

Additional Interests

- Racism and Health
 - Health Behaviors and Racial Health Disparities
- Group-Based Medical Mistrust
- Community –Based Citizen Science
- Disadvantaged and Under-represented Students' Success

Gaining perspective on SUD treatment and recovery services for foster care youth in Michigan: An Evaluation Project

OUWB researchers received \$89,549 to conduct a project evaluation



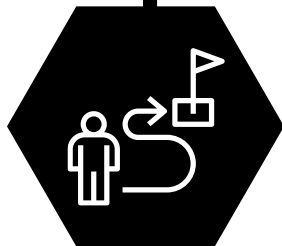
The project was funded by MDHHS

This project will support the goals and objectives of the 1003 Demonstration Project by helping to formulate challenges related to SUD treatment and recovery services.



The population: Youth in foster care

While foster care youth are not trying illicit substances at higher rates, they have higher rates of substance abuse and dependence.



The purpose

Understanding the lived experience of youth & their caregivers will aid the Department in adjusting practices and policy related to SUD service delivery.

Home-based Older Persons Upstreaming Prevention Physical Therapy



- External Funding: \$545,933
- Program designed to provide early preventative interventions to help senior citizens with mobility issues stay safe and active in their homes and communities
- Over 305 older adult participants since 2016; 39 students involved with HOP-UP-PT
- Partners with 10 communities throughout Michigan and Henry Ford Health
- Future Research Directions:
 - Fiscal analysis through Medicare to get HOP-UP-PT as a standard of practice
 - Strategic partnerships with other University investigators
 - Long term outcomes including cost of care
- Dissemination: 10 publications (including an invited Masterclass) and 15 presentations

Virtual Prototyping System for Soldier Evaluation of New Technologies Using Immersive Gaming Environments

Geoff Louie is leading a team of OU faculty researchers and students, along with engineers from GVSC, to transform current approaches used in the development of autonomous vehicles. They aim to:

- advance state-of-the-art virtual prototyping techniques using immersive gaming environments
- save cost and time in the development of concept technologies



This research includes investigating how soldiers behave with new technologies using immersive virtual environments and building artificial intelligence models that improve human-technology interactions. This work is critical to the adoption and safe use of new technologies for soldiers.

Geoff's research lab also focuses on developing effective human-robot interactions (HRI) with a specific emphasis on having robots interact with non-experts. He works to improve the effectiveness and efficiency of interactions and to create real-world applications of HRI.

Intelligent Robotics Laboratory 

HRI Applications

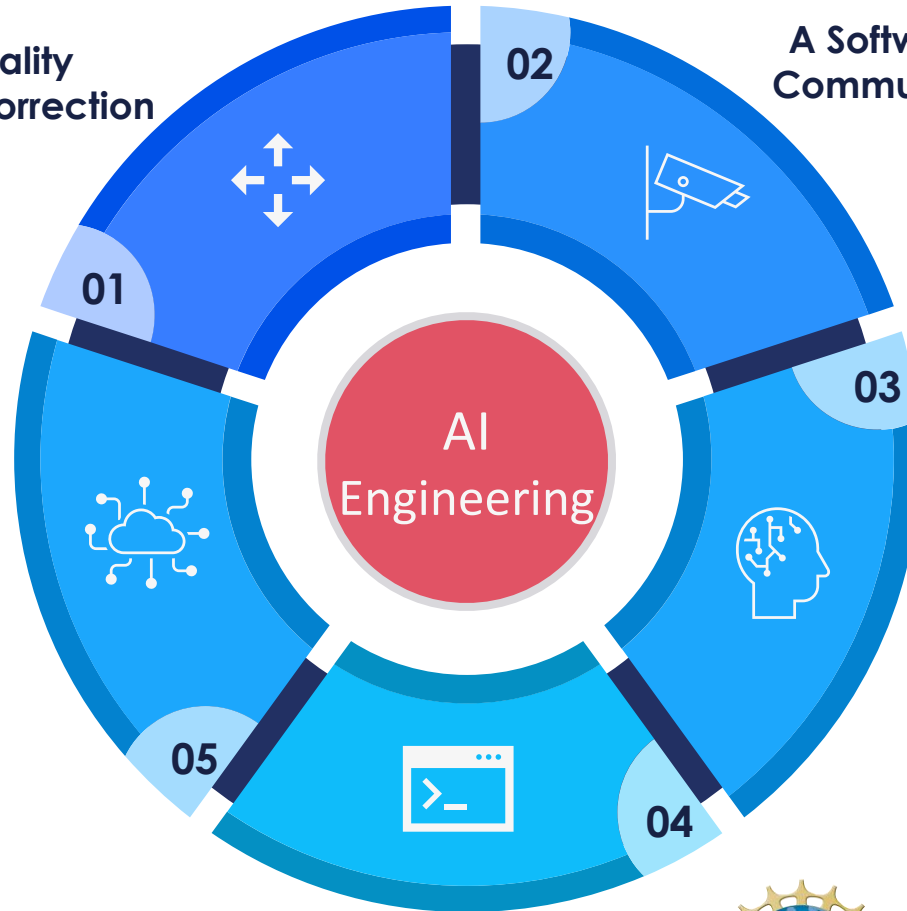


Marouane Kessentini, SECS

6 NSF Research Grants: Artificial Intelligence and Software Engineering

An Infrastructure for Software Quality and Security Issues Detection and Correction

\$600,000



A Software Refactoring Community Infrastructure

\$1.3M



Intelligent Software Refactoring Bot for Continuous Integration

\$305,000



Software Health Monitoring and Improvement Framework

\$299,599



Intelligent Software Quality Monitoring and Improvement Technology

\$50,000



Dr. Marouane Kessentini
Professor and Interim Chair,
Computer Science and
Engineering Department
Director, NSF IUCRC Center on
Pervasive AI

Marouane Kessentini, SECS

6 NSF Research Grants: Artificial Intelligence and Software Engineering

NSF IUCRC Center on Pervasive
Personalized Intelligence



\$20,000 + \$1.5M

**12 Industry members
30+ PhD Students
7 OU Projects**

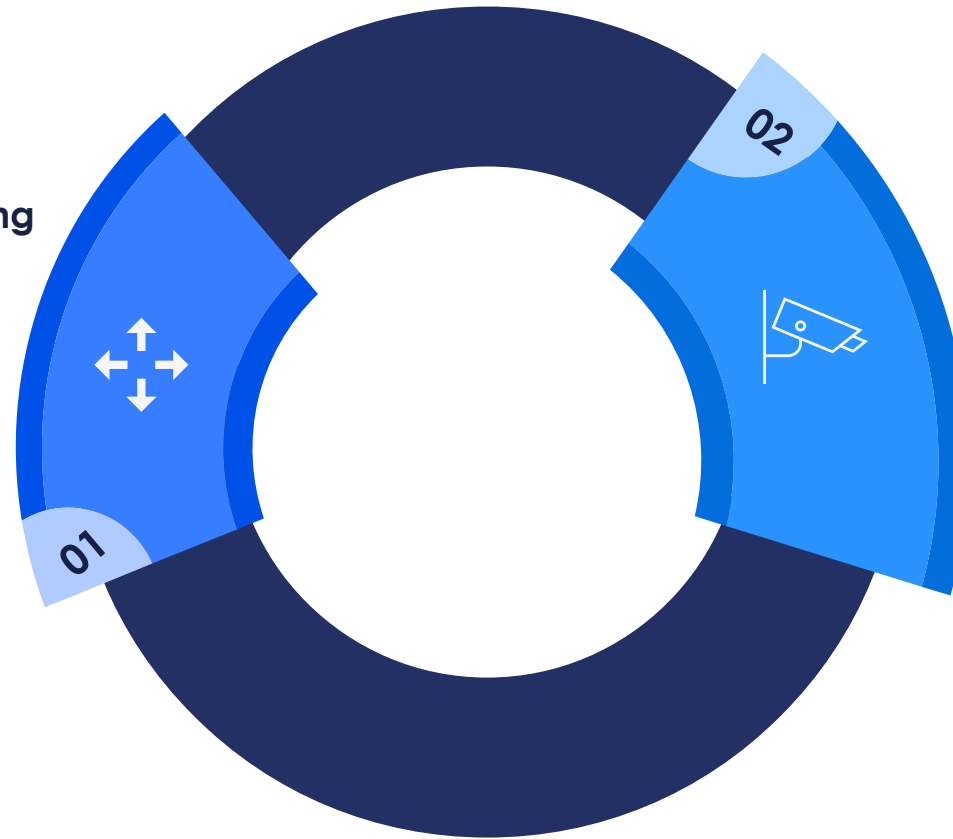


Marouane Kessentini, SECS

Department of Energy and US Army/GVSC Grants

Intelligent Rapid Generation of Virtual
Environments in Multi-User Immersive Gaming
Environments via Multi-Objective Search

\$1,000,000



Oakland University
Cybersecurity
Center

\$1,000,000



Building a Culture of Learners in Pontiac: A Community-University Partnership Project

The Pontiac Regional Chamber of Commerce and OU Early Childhood PhD Program have partnered to support international PhD students to build a culture of learners and future global leaders in Pontiac. Their shared vision is for high quality early learning experiences that help build a solid foundation for children's school and life success.

They established an International Graduate Assistantship which includes:

- Funds to support an international Early Childhood PhD student from an African country or of African descent
- Research support to help the student build a culture of learners in Pontiac
- Mentoring by both the Chair of the Chamber and OU Early Childhood faculty
- Dissemination of results at national and international conferences, and publications in peer-reviewed journals



Instruction, Scholarship, and Student Support

CyberCorps Scholarship for Service: Cyber Defense of Intelligent Systems

- Total Award Amount: \$3,198,315
- Principal Investigator: Dr. Huirong Fu
- Co-PIs: Dr. Darrin Hanna, Dr. Lunjin Lu, and Dr. Amartya Sen
- Students will work on research projects: security policies, system vulnerabilities and countermeasures, legal and social issues, AI and ML in mobile security and wireless security, and security in big data.
- Multi-level advising and mentorship program specifically for cybersecurity in government.
- [Program website](#) and [NSF press release](#)



National Science Foundation
and

The Department of Homeland Security

hereby certify that

Oakland University

is a member of the

CyberCorps®: Scholarship for Service (SFS) Community



Physician Assistant Science

- Federal HRSA Appropriation for \$1.6M to support costs associated with the launch of the new program.



Upward Bound



- US Department of Education TRIO program.
- Provides enrichment and preparation activities to promising students from 8th grade on who come from low income households.
- FY22: Renewal of 5 year grant (\$3.5M).
- 56 years of continuous funding.

- Since 1996, Ms. Graham has written successful renewals of the Upward Bound grant totaling over \$17M!!!



Economic Development

Oakland University Incubator

OU INC is a SmartZone Business Accelerator, funded by the Michigan Economic Development Corporation (MEDC).

Client Highlights

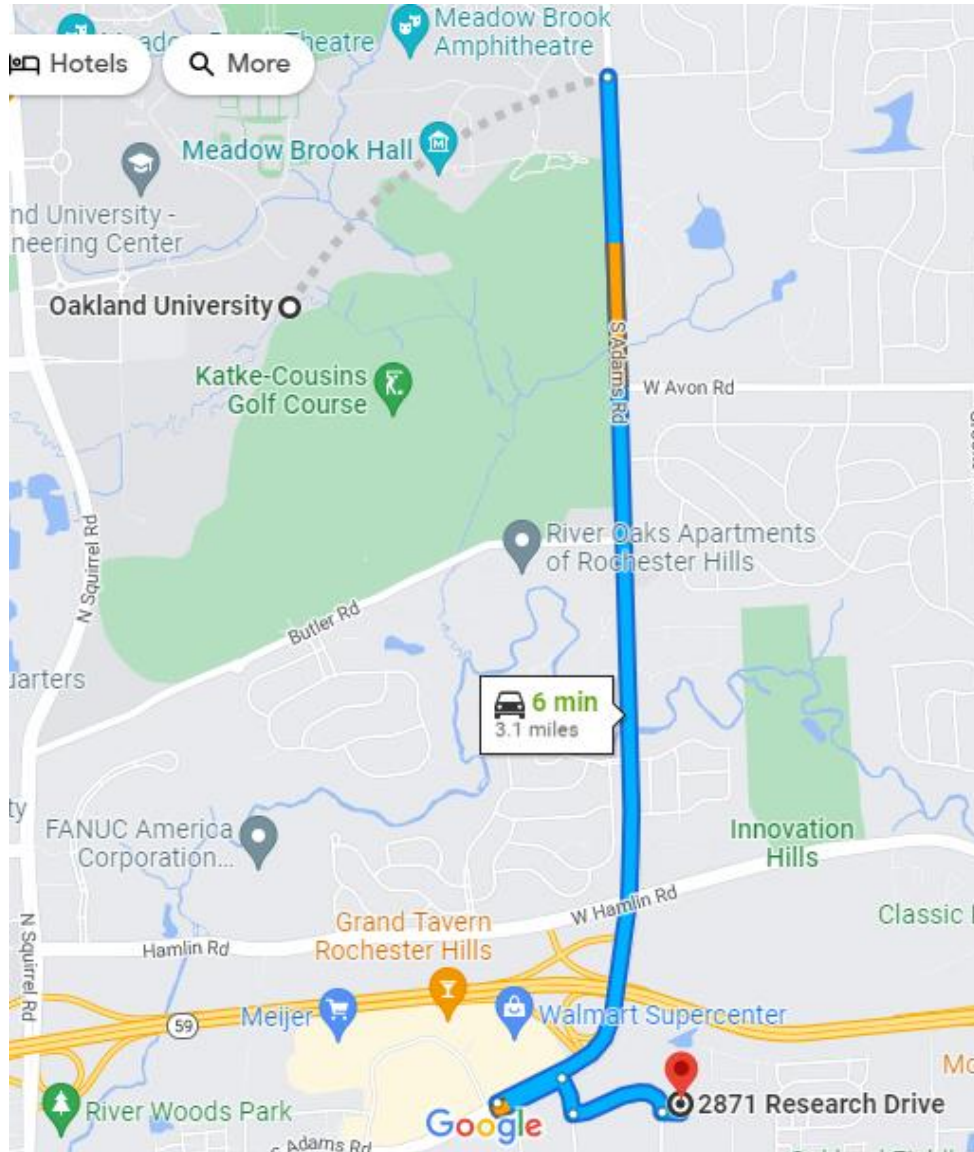
- GryphonHR: SAAF applications. **Won a 2022 Michigan Small Business of the Year award!**
- Excelsior Engineering: Embedded software. OU alumni company, employing 5 OU alumni and an OU student.
- Berylline: Electric mobility (hybrid scooters). New project: modifying its electric police scooter in collaboration with the OUPD to be piloted at OU.
- Softworx: Medical software. OU alumni & Ph.D. candidate company, employing an OU student and an OU alum.
- Car Studio (graduate): International automotive engineering. From Italy, they were an INC Tenant client for 18 months until they opened their USA headquarters in Troy, MI.
- Geofabrica (graduate): Advanced manufacturing. They have grown to 20+ highly skilled and paid full time employees, and have generated over \$5M in the past 2 years.



OU INC SmartZone Performance Highlights

- *520 High Tech Jobs Created*
- *1,188 High Tech Jobs Retained*
- *69 High Tech Companies Created*
- *74 New Patents Filed*
- *216 Faculty Engaged*
- *1,740 Students Engaged*
- *\$861,921 in BAF Funding*
- ***\$168,000,000 in Total Follow-on-Funding***

New Capacity



**New research building:
Innovation and Research Center
for SECS**

Located just minutes from campus

2871 Research Drive

Rochester Hills, MI 48309

New Capacity

New research building: Innovation and Research Center for SECS



It takes a Village...

Thanks to:

- Research Office Staff
- The Deans and Chairs

- Departmental Business Officers
- Office of Legal Affairs
- Purchasing Department
- Finance and Administration
- Facilities
- The Provost's Office

- All the Graduate and Undergraduate Students who do so much of the work and the faculty who teach and mentor them.



Research Office Staff



QUESTIONS?