

Agendum
Oakland University
Board of Trustees Formal Session
August 8, 2022

**ACCEPTANCE OF GRANTS AND CONTRACTS TO OAKLAND UNIVERSITY
FOR THE PERIOD OF MAY 1 – JUNE 30, 2022**
A Recommendation

1. **Division and Department:** Academic Affairs/Research Office

2. **Introduction:** Oakland University contributes to our national agenda as a contributor to the nation's scientific and technological progress, both through the generation of new knowledge and ideas and the education and training of its students. Grants and contracts awarded to Oakland University play a critical role in the advancement of new research findings, and current research trends gives emphasis to inter-disciplinary, technology-driven, and product-oriented team efforts.

The Board of Trustees (Board) has authorized the President, or his or her designee, to receive and acknowledge grants and contracts to the University, but such grants and contracts must be reported to the Board not less often than quarterly for acceptance on behalf of the University.

At this time, we request that the Board accept the grants and contracts reported on the attached Grants and Contracts Report, Attachment A, for the period of May 1 through June 30, 2022.

3. **Previous Board Action:** The Board accepts grants and contracts to Oakland University on a regular basis at its Formal Sessions.

4. **Budget Implications:** Grants and contracts contribute to the University through the recovery of direct and indirect expense incurred in support of research projects.

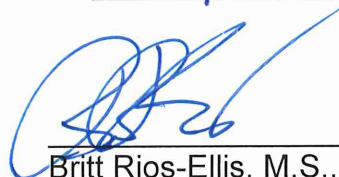
5. **Educational Implications:** Grants and contracts enhance the training and education of students.

6. **Personnel Implications:** Grants and contracts awards may provide salary support for faculty, post-doctoral fellows, undergraduate and graduate students, technicians, lab managers, and other personnel, as required by the funded research project or program.

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7. **University Reviews/Approvals:** All grants and contracts are reviewed by the Research Office prior to submission to the Board to ensure compliance with federal and state laws and regulations and University policies and procedures, when applicable, and with assistance from the Office of Legal Affairs when requested.
8. **Recommendation:** RESOLVED, that the Board of Trustees accept grants and contracts to Oakland University identified in the attached Grants and Contracts Report, Attachment A, for the period of May 1 – June 30, 2022.
9. **Attachments:** A. Grants and Contracts Report.

Submitted to the President
on 7/29, 2022 by

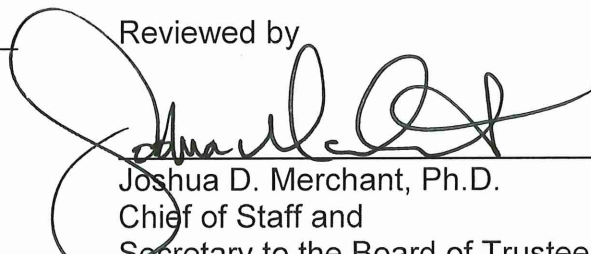


Britt Rios-Ellis, M.S., Ph.D.
Executive Vice President for
Academic Affairs and Provost

Recommended on 8/1, 2022
to the Board for approval by



Ora Hirsch Pescovitz, M.D.
President

Reviewed by


Joshua D. Merchant, Ph.D.
Chief of Staff and
Secretary to the Board of Trustees

ATTACHMENT A

Grants and Contracts Report for Period May 1 - June 30, 2022

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
G. Rasul Chaudhry Department of Biological Sciences	National Institutes of Health	Efficacy of NSCs in an EAE model of MS. The long-term goal of this research is to develop cell therapies for multiple sclerosis (MS) and other neurodegenerative diseases. The main objective of this study is to use a multifaceted approach that simultaneously provides anti-inflammatory and neuroprotective response as well as promotes endogenous neural repair.	\$150,000	\$600,000
Andrew Goldberg Eye Research Institute	National Institutes of Health	Investigation of the Molecular Basis of Rod and Cone Photoreceptor Structure. This research will improve understanding of healthy rod and cone cell structure and the changes that occur during progressive retinal disease, and may suggest strategies for preserving sight.	\$381,332	\$1,967,042
Ilias Cholis Department of Physics	National Science Foundation	Dark Matter Primordial Black Holes Under the Scrutiny of LIGO's Observations. The goal of this research is to develop new probes to search for signals of primordial black hole (PBH) dark matter at gravitational-wave observations.	\$39,428	\$150,000

Grants and Contracts Report for Period May 1 - June 30, 2022

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Mark Manning Department of Psychology	National Institutes of Health	<p>Colorectal Screening Fear-Reduction and Racially-Targeted Norm Messaging Entreaties to Increase Colorectal Cancer Screening Rates Among African Americans.</p> <p>Colorectal cancer (CRC) is one of the leading causes of cancer mortality in the United States, and African Americans (AfAms) still fare worse in CRC incidence and mortality compared to European Americans (EuAms). Interventions to increase CRC screening rates among AfAms are instrumental to address the disparities in CRC incidence and mortality. This study is significant because it directly addresses documented CRC screening deficits among an underserved population, and is innovative given its design of a theory-based and literature informed intervention to address previously unaddressed barriers to CRC screening among AfAms.</p>	\$224,294	\$396,351
Laila Guessous Department of Mechanical Engineering	Michigan Space Grant Consortium, University of Michigan	<p>Michigan Space Grant Consortium Affiliate Operating Award 2022-2023. The NASA-funded Michigan Space Grant Consortium (MSGC) provides a small annual grant to its institutional affiliate board members to help cover the costs of administering the program.</p>	\$1,500	\$1,500

Grants and Contracts Report for Period May 1 - June 30, 2022

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Sarah Beetham Student: Emily Foster Department of Mechanical Engineering	Michigan Space Grant Consortium (MSGC), University of Michigan	The Theoretical Modeling, Simulation, and Control of Search and Rescue / Surveillance Drones for Volcanic Eruptions. The goal of this research is to create a novel drone that utilizes real-time meteorological data, machine learning, and controls for search-and-rescue, surveillance, and damage control in volcanic environments.	\$5,000	\$5,000
Jingshu Chen Student: Justin Kur Department of Computer Science and Engineering	Michigan Space Grant Consortium, University of Michigan	A User-friendly Generic Performance Estimation Platform for Bridging System Performance Prediction and Resource Management. The objective of this research will be to introduce a new userfriendly learning based generic platform that can be applied for distributed data-centered systems that can support the space missions of NASA.	\$5,000	\$5,000
Zhe Wang Student: Christopher Alexopoulos Department of Chemistry	Michigan Space Grant Consortium, University of Michigan	Rapid and Accurate Small Molecules Detector for Health Monitoring in Space Travel. Our objective is to create a method of small molecule detection that is able to be contained within the space station, one that does not require freezing and further analysis on Earth.	\$3,900	\$3,900

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Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Sarah Beetham Department of Mechanical Engineering	Michigan Space Grant Consortium, University of Michigan	Simulation and Modeling of Atmospheric Plumes--Toward Optimized UAV Control. The goal of this work is to conduct high-fidelity simulations of atmospheric plumes and leverage data-driven techniques to improve reduced order models and predict model uncertainty.	\$5,000	\$5,000
Mehdi Bagherzadeh Department of Computer Science and Engineering	Michigan Space Grant Consortium, University of Michigan	Mutation Testing to Improve Correctness of Message Passing Software. This project will establish μ NASA, an experimental framework to design, develop, and evaluate efficient, affordable, and scalable message passing mutation testing.	\$5,000	\$5,000
Yongsoon Yoon Department of Mechanical Engineering	Michigan Space Grant Consortium, University of Michigan	SEED: Sensor Fault Diagnostics for Robust and Reliable Operation of Lithium-Ion Batteries. This project aims to develop the diagnostics of the lithium-ion batteries that can detect and isolate the current and voltage sensors faults.	\$5,000	\$5,000
Jun Chen Department of Electrical & Computer Engineering	Michigan Space Grant Consortium, University of Michigan	Impacts of Battery Cell Imbalance on Electric Vehicles Range and Their Mitigation via AI and Controls. Aim 1: Develop a simulation platform to evaluate the impacts of battery cell imbalance for electric vehicles; Aim 2: Develop an AI-based control framework to mitigate the impacts of battery cell imbalance.	\$5,000	\$5,000

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Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Krzysztof Kobus Department of Mechanical Engineering	Michigan Space Grant Consortium, University of Michigan	Earth System Science STEM Camps, Outreach and Teacher Training (K-12 Students and Teachers, and the Community). This funding will provide hands-on, student-centered, activity-based outreach and education in Space and Earth System sciences to K-12 students.	\$20,000	\$20,000
Geraldine Graham Upward Bound	Department of Education	Oakland University Project Upward Bound College Prep Academy. The Project Upward Bound College Preparatory Academy at Oakland University will serve 133 Upward-Bound-eligible participants from one target area encompassing the communities of Pontiac and Royal Oak Charter Township, Michigan, where 50% of households have incomes below U. S. Department of Education low-income guidelines and only an average 11.5% of adult citizens (7% of low-income) have a bachelor's degree.	\$710,970	\$3,554,850
Anne Hranchook School of Nursing	Health Resources and Services Administration	Oakland University Nurse Anesthetist Traineeship Program. The purpose of the Nurse Anesthetist Traineeship (NAT) project is to help address the Health Resources & Service Administration's objectives and clinical priorities. The intent of the NAT project is to provide full time graduate nurse anesthesia students enrolled in the Oakland University-Beaumont Graduate Program of Nurse Anesthesia with traineeship support needed.	\$30,278	\$95,184

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Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Xiangqun Zeng Department of Chemistry	EZ Lab, LLC	Troponin Biosensor for Early Detection and Real-Time Monitoring of Myocardial Infarction. The goal of this research is to develop a novel Troponin biosensor allowing for early, rapid detection and continuous monitoring of both troponin I and T. Such a device will better detect the initiation and progress of myocardial injury.	\$120,000	\$120,000
Luca Cucullo School of Medicine	Texas Tech Univ / NIH	Repurposing Metformin to Offset Stroke Risk and Injury in Comorbid Populations of Smokers. Among the goals of this research, we will unravel the molecular target through which Metformin can positively impact the blood-brain barrier and reduce the burden of stroke and cerebrovascular impairments in chronic smokers and vapors.	\$292,795	\$1,469,736
Marouane Kessentini Department of Computer Science and Engineering	National Science Foundation	PFI-TT: Intelligent Software Refactoring Bot for Continuous Integration. This project focuses on developing scalable methods to determine when and how to integrate developer feedback to semi-automate code refactoring for continuous integration environments while adhering to industry standards to align the effort with their commercialization objectives.	\$54,133	\$304,133

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Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Mary Jamieson Department of Biological Sciences	U.S. Fish and Wildlife Service (USFWS)	Investigating the Role of Fire and Invasive Species Management on Plant-Pollinator Interaction Networks in Vulnerable Grassland Habitats. This research project will be conducted in Southeast Michigan in an interface between urban and wildland habitats with surrounding agroecosystems. The overarching goal of this project is to inform pollinator conservation efforts in the region by investigating the influence of habitat management activities on bees and butterflies as well as the plant communities that support these pollinators.	\$17,445	\$17,445
Luis Villa Diaz Department of Biological Sciences	University Of Michigan	Synthetic Substrates to Grow Human Pluripotent Stem Cells. In this project, we will test the shelf-life and the minimum material required to produced synthetic substrates for the culture of pluripotent stem cells.	\$43,988	\$43,988

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Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Marouane Kessentini Department of Computer Science and Engineering	National Science Foundation	Collaborative Research: Elements: Software: Software Health Monitoring and Improvement Framework. This project seeks to bridge the gap between software engineering community and other science and engineering community in general. It will provide quantitative comparisons of software projects against an industrial benchmark, enable users to pinpoint software issues responsible for high maintenance costs, visualize the severity of the detected issues, and refactor them using the proposed interactive refactoring framework.	\$73,759	\$299,534
Joshua Yax Lowry Center	State of Michigan	MDE Child Care Stabilization Grant FY22. The Child Care Stabilization Grant provides financial relief to child care providers. These funds will be used to stabilize operations, cover unexpected costs due to the pandemic, and provide bonuses to child care professionals.	\$211,000	\$412,000
Stephen Kent Smart Zone Business OU Incubator	Grand Valley State University/ MEDC	Advanced Research Solutions, BAF-Panel Award, Aveopt. The objective of this project is to make accelerator services available statewide, make services available to high priority companies in regions, share accelerator best practices statewide, build lasting collaborations, and create jobs to catalyze multiplier effect.	\$30,480	\$30,480

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Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Marouane Kessentini Department of Computer Science and Engineering Khalid Mahmood Malik Department of Computer Science and Engineering Ali Malik Department of Industrial & Systems Engineering	Automation Alley / DOE	Oakland University Cybersecurity Center. Automation Alley and Oakland University will create a Cybersecurity Center to address the cybersecurity threats for manufacturers transitioning to industry 4.0. This Cybersecurity Center will benefit Michigan economy by helping small and midsize manufacturers transition to Industry 4.0 (I4.0) to improve their productivity, growth and employment.	\$1,000,000	\$1,000,000
Britt Rios-Ellis Academic Affairs Lindsay Gietzen Department of Clinical and Diagnostic Sciences	Health Resources and Services Administration	Oakland University (OU) Master of Science Physician Assistant (MSPA) Program. This funding will be used to purchase equipment, fixtures, furnishings, and software, to equip OU's new MSPA program at 1500 University Drive, Auburn Hills, MI. This program will focus on meeting healthcare needs of medically underserved individuals in Oakland County by supporting the training of physician assistants as allied healthcare providers, mitigating Oakland County's physician shortage and improving urban, rural, and local community health.	\$1,600,000	\$1,600,000
Total Awards			\$5,035,302	\$12,116,143