

**Agendum  
Oakland University  
Board of Trustees Formal Session  
June 15, 2020**

**ACCEPTANCE OF GRANTS AND CONTRACTS TO OAKLAND UNIVERSITY  
FOR THE PERIOD OF MARCH 1 - APRIL 30, 2020**  
**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 March 1 – April 30, 2020.

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.

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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.

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 March 1 – April 30, 2020.

9. **Attachments:** A. Grants and Contracts Report.

Submitted to the President  
on \_\_\_\_\_, 2020 by

\_\_\_\_\_  
James P. Lentini, D.M.A.  
Senior Vice President for  
Academic Affairs and Provost

Recommended on \_\_\_\_\_, 2020  
to the Board for approval by

  
\_\_\_\_\_  
Ora Hirsch Pescovitz, M.D.  
President

## Grants and Contracts Report for Period March 1 - April 30, 2020

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Robert Swor Oakland University William Beaumont School of Medicine	American Heart Association / University of Michigan	<b>Michigan Resuscitation Innovation and Science Enterprise.</b> This initiative will support a collaboration of basic, clinical and population researchers from different disciplines whose collective efforts will lead to new approaches to study arrhythmias and sudden cardiac death.	\$16,452	\$180,983
Kevin Corcoran College of Arts and Sciences	United Way	<b>United Way COVID-19 Pontiac.</b> This funding will be used to help ensure families in need can access food, health care, financial resources and other supports.	\$20,000	\$20,000
Tracey Taylor Oakland University William Beaumont School of Medicine	Association of American Medical Colleges (AAMC)	<b>Evaluation of the Use of Artificial Intelligence to Map Medical Education Assessment Alignment.</b> This research project will evaluate artificial intelligence-supported curriculum mapping as a forward-looking way to improve the quality of medical school curricular management and data reporting.	\$5,000	\$5,000

## Grants and Contracts Report for Period March 1 - April 30, 2020

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Stephen Kent Smart Zone Business OU Incubator	Grand Valley State University/ MEDC	<b>Business Accelerator Fund-Client Engagement, Olive Biosciences COVID-19.</b> 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.	\$50,000	\$50,000
David Garfinkle Department of Physics	National Science Foundation	<b>Studies of Singularities, Black Holes, and Gravitational Radiation.</b> The objective of this project is to study aspects of gravitational collapse, in particular the approach to the singularity, gravitational wave memory, and critical behavior at the threshold of black hole formation.	\$51,737	\$153,397

## Grants and Contracts Report for Period March 1 - April 30, 2020

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
<b>Wing-Yue Geoffrey Louie</b> Department of Electrical & Computer Engineering	National Science Foundation	<b>CRII: CHS: Healthcare Professionals Teaching Robots Communication Strategies for Effective Intervention Delivery.</b> The long-term research vision of the PI is to develop SARs that can be easily customized and personalized to healthcare needs and preferences of an individual. This project is an important first step by enabling healthcare professionals to teach an intervention to a robot and nonverbal communication strategies necessary for effective intervention.	\$174,883	\$174,883

## Grants and Contracts Report for Period March 1 - April 30, 2020

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
<b>Wei Zhang</b> Department of Physics	United States Air Force	<b>THz Spintronics with Antiferromagnetic Heterostructures.</b> The aim of this research is to experimentally investigate the feasibility of generating and manipulating antiferromagnetic magnons by spin-orbit torques across the interfaces with antiferromagnetic surfaces. We will also study the antiferromagnetic magnon behavior and its role in rectifying, filtering, and transforming THz spin signals, and finally to realize proof-of-concept THz auto-oscillator and rectifier using a broad range of antiferromagnetic materials and structures.	\$74,000	\$140,000
<b>Vijitashwa Pandey</b> Department of Mechanical Engineering	University of Michigan (DoD)	<b>A Decision Based Mobility Model for Semi and Fully Autonomous Vehicles.</b> The goal of this research is to use formal decision making theory to make decisions regarding acquisition and operation of autonomous ground vehicles.	\$76,852	\$144,314

## Grants and Contracts Report for Period March 1 - April 30, 2020

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Zissimos Mourelatos Department of Mechanical Engineering	University of Michigan (DoD)	<b>Probability of Mobility for mission planning of Autonomous Ground Vehicles at High Stress Environments.</b> The objectives of this research are 1) to account for heterogeneous uncertainty sources to improve the prediction confidence in developing a NG-NRMM, and 2) to develop a mission planning approach for operation in “high stress” environments.	\$40,001	\$100,000
Chad Martinez Department of Diversity, Equity and Inclusion	Michigan State Police	<b>FY20 Campus Sexual Assault Grant Program.</b> The objective of this project is to raise awareness of sexual assault on campus through the activities e.g. Forensic Interview, Sex signals training etc.	\$49,890	\$49,890
Jonathan Maisonneuve Department of Mechanical Engineering	University of Michigan MSGC/NASA	<b>Energy from Fertilizer: Water Filtration and Power Generation in Space-Based Plant Cultivation.</b> The goal is to develop a novel system for harnessing energy available in concentrated plant fertilizer in order to both purify and pressurize waste water, thereby producing a clean nutrient solution that is suitable for delivery to plants in zero-gravity.	\$5,000	\$5,000

## Grants and Contracts Report for Period March 1 - April 30, 2020

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
<b>Shadi Alawneh</b> Department of Electrical and Computer Engineering	University of Michigan MSGC/NASA	<b>Gabor Transform for SAR Image Compression.</b> The main goal of this project is to initiate research activities in the area of image compression using the General Purpose computing on Graphics Processing Units (GPGPU) approach.	\$5,000	\$5,000
<b>Seyed Ali Arefifar</b> Department of Electrical and Computer Engineering	University of Michigan MSGC/NASA	<b>Electric Vehicles Penetration for Minimizing Power System Upgrades.</b> This research project aims to illustrate the potential of Electrical Vehicles for improving performance of power distribution systems and show their potential to minimize or defer power system's costly upgrades.	\$5,000	\$5,000
<b>Krzysztof Kobus</b> Department of Mechanical Engineering	University of Michigan MSGC/NASA	<b>Earth Science STEM Camps, Outreach and Teacher Training.</b> 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



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Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
<b>Ziming Yang</b> (mentor) <b>Alexandria Aspin</b> (student) Department of Chemistry	University of Michigan MSGC/NASA	<b>Examining mineral controls on amide bond formation under hydrothermal conditions.</b> The goal of this research is to investigate how minerals influence the hydrothermal pathways of amides, specifically focusing on three different types of minerals and examine their effects on hydrothermal reactivity of amides.	\$5,000	\$5,000
<b>Colin Wu</b> Department of Chemistry	University of Michigan MSGC/NASA	<b>Assessing the Late Effects of Microgravity on Human Health.</b> This research project objective is to maintain human retinal ganglion and heart muscle cells under microgravity to mimic the low shear forces of space. Cell viability at normal or simulated gravity will be monitored routinely.	\$4,988	\$4,988
<b>Nasim Nezamoddini</b> (mentor) <b>Cody Donovan</b> (student) Department of Industrial & Systems Engineering	University of Michigan MSGC/NASA	<b>Fell: Using Markov Decision Processes for Autonomous Spacecraft.</b> The goal of this research is to implement Markov Decision Processes (MDP) to help spacecraft with attitude control.	\$3,000	\$3,000

## Grants and Contracts Report for Period March 1 - April 30, 2020

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Colin Wu (mentor) Kaitlin Lowran (student) Department of Chemistry	University of Michigan MSGC/NASA	<b>Fellowship: Evaluating the delayed effects of Microgravity on Human Health.</b> The human genome receives damage from UV, oxidative stress, and other environmental toxins. Such damage includes the formation of base pair mismatches, abasic sites, or unusual DNA structures that lead to genetic instability. The goal of this research is to simulate a low-gravity environment to establish a baseline growth rate of DNA damage and study the type of damage formed from delayed and long-termed exposure of microgravity.	\$5,000	\$5,000
Laila Guessous Department of Mechanical Engineering	University of Michigan MSGC/NASA	<b>MSGC Affiliate Operating Award MSGC.</b> 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. Laila Guessous is the Oakland University Affiliate and provides assistance to OU faculty and students seeking to apply for MSGC grants.	\$1,500	\$1,500

## Grants and Contracts Report for Period March 1 - April 30, 2020

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Venice T. Sule Department of Organizational Leadership	Eastern Michigan University/NSF	<b>IGE: Mentoring for Life: Enhancing STEM Graduate Student Well-Being.</b> The principal investigator will assist in developing and assessing the mentoring program at EMU, building partnerships with key OU faculty and administrators, modifying workshops aligned with the needs of OU graduate students, and surveying graduate students.	\$39,418	\$39,418
Zissimos Mourelatos Department of Mechanical Engineering	HBM Prensicia, LLC	<b>Development of a Physics-based Model for Deformation Analysis of Lock Gates.</b> This project will develop an accurate prediction tool of the strain/stress field at predetermined locations on the gate.	\$18,800	\$18,800
Andrei Slavin Department of Physics	Air Force Office of Scientific Research / University of Central Florida	<b>Terahertz Spintronics with Antiferromagnetic Insulators.</b> The goal of this research is to develop new materials and techniques, leveraging the unique properties of antiferromagnets to transform methods of generation, transmission, and processing of THz signals.	\$ 180,000	\$ 877,749

## Grants and Contracts Report for Period March 1 - April 30, 2020

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Tanya Christ Department of Reading & Language Arts	University of Buffalo/Spencer	<b>Reading and (Re)writing the World: Exploring Critical Pedagogy of Place in Early Science and Literacy Learning.</b> This funding will be used to develop the comprehension and vocabulary instruction and assessment aspects of the pedagogy in early literacy, as well as teacher professional development.	\$ 10,324	\$ 10,324
Andrei Slavin Department of Physics	University of California, Irvine/ NSF	<b>EFRI NewLAW: Non-Reciprocal Spin Waves in Chiral Magnetic Systems.</b> The goal of this project is to use a novel approach for the creation of non-reciprocal spin waves and hybrid magneto-acoustic waves.	\$ 129,999	\$ 559,999
Gopalan Srinivasan Department of Physics	United States Air Force	<b>Electric Field Control of Magnetism in Ferrites for Sub-THz Electronics.</b> The goal of this research on electric field control of magnetic properties is aimed at miniaturization of self-biased ferrite devices for possible integration with semiconductor devices.	\$ 58,798	\$ 423,798

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Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Edward Rohn Department of Health Sciences	University of Michigan/ Neilsen Foundation	<b>Phenomenology of Chronic Pain After Spinal Cord Injury: Experience, Adaptation and Qualify of Life.</b> The goal of this research is qualitative, ethnographic investigation of the complex social component of the life experience of chronic pain following spinal cord injury.	\$ 22,400	\$ 53,383
Krzysztof Kobus Department of Mechanical Engineering	United States Army REAP Cite	<b>REAP Summer Research Experience.</b> This project will provide funding for students that will be performing supervised research for the summer.	\$ 2,000	\$ 2,000
John Beaghan Department of Finance and Administration	United States Department of Education	<b>Oakland University Emergency Financial Aid Grants under the CARES Act-COVID-19.</b> Oakland University received government funding as part of the CARES Act to be distributed directly to students in the form of emergency grants to cover expenses related to unexpected financial needs due to the coronavirus pandemic.	\$6,898,412	\$6,898,412
<b>Total</b>			<b>\$7,973,454</b>	<b>\$9,956,838</b>