

**Agendum
Oakland University
Board of Trustees Formal Session
June 21, 2021**

**ACCEPTANCE OF GRANTS AND CONTRACTS TO OAKLAND UNIVERSITY
FOR THE PERIOD OF MARCH 1 – APRIL 30, 2021**
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 through April 30, 2021.

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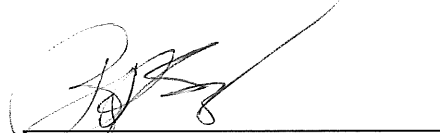
6. **Personnel Implications:** Grants and contracts awards may provide salary support for faculty, post-doctoral fellows, undergraduate and graduate students, technicians, lab managers, and other personnel, as required by the funded research project or program.

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, 2021.

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

Submitted to the Provost
on 6/7, 2021 by



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

Recommended on 6/9, 2021
to the Board for approval by



Ora Hirsch Pescovitz, M.D.
President



Grants and Contracts Report for Period March 1 - April 30, 2021

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Khalid Mahmood Malik Department of Computer Science and Engineering	Imam Mohammad IBN Saud Islamic University	Usage of Modern Technologies to Predict Emergence of Infectious Diseases and to Detect Outbreak of Pandemics. In collaboration with IMSIU, OU will be responsible for data collection, processing and mining, model development as well as development of intelligent and interactive surveillance system and its testing and deployment.	\$163,780	\$163,780
Jennifer Lucarelli Department of Interdisciplinary Health Sciences	Michigan Department of Education/USDA	Team Nutrition 19. Dr. Lucarelli will provide consultation services to the Michigan Department of Education and Michigan Public Health Institute for evaluating the USDA E-STAR school nutrition manager training program.	\$16,750	\$16,750
Sergey Golovashchenko Department of Mechanical Engineering	General Motors Company	Coefficient of Friction Evaluation for Forming. Oakland University will evaluate the coefficient of friction for forming through a series of testing services, to be conducted by Dr. Golovashchenko and two Ph.D. students.	\$31,067	\$31,067
Zissimos Mourelatos Department of Mechanical Engineering	University of Michigan	Probability of Mobility for Mission Planning of Autonomous Ground Vehicles at "High Stress" Environments. 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.	\$57,505	\$135,601

Grants and Contracts Report for Period March 1 - April 30, 2021

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Andrei Slavin Department of Physics	University of Chicago/ DARPA	Amplification of Exchange Magnons in Nanometer-Thick YIG Films by Spin-Orbit Torque. The goal of this research is to achieve broadband amplification with a gain over 1 dB for exchange magnons traveling in nanoscale yttrium-iron garnet (YIG) waveguides.	\$291,515	\$291,515
Yang Xia Department of Physics	National Institutes of Health	ACL-Deficiency Modifies Topographical Degradation in Posttraumatic Osteoarthritis. The long-term goal of this research is to apply the imaging-based biomarkers to detect the early degradation of cartilage and subchondral bone during the progression of osteoarthritis, so that clinical outcomes can be improved.	\$399,178	\$2,229,522
John Beaghan Finance and Administration	Michigan State Budget Office/US Treasury	Michigan State Budget Office Coronavirus Relief Fund. Oakland University received government funding as part of the CARES Act to cover institutional expenses resulting from the coronavirus pandemic.	\$5,956,500	\$5,956,500
Stephen Goody Department of Art and Art History	Art Bridges	Art Bridges Ahead Initiative: Upgrades to OU Art Gallery Website to Increase Virtual Presence. This grant will fund alternative community engagement initiatives due to COVID restrictions on the art gallery's accessibility.	\$6,350	\$6,350

Grants and Contracts Report for Period March 1 - April 30, 2021

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Daniel DeVescovo Department of Mechanical Engineering	Oak Ridge National Lab/DOE	Stoichiometric Spark Ignition Propane Engine with Diesel Efficiency Parity. The objective of this project is to develop and demonstrate emissions compliant technology pathways and fundamental understanding to achieve medium-duty engine and drive cycle efficiency equal to or near-diesel.	\$34,584	\$34,584
Luca Cucullo School of Medicine	Texas Tech University/NIH	Testing Tobacco Smoke and E-Cigarette Toxicity at the Blood-Brain Barrier. The objectives of this research are to assess the potential cerebrovascular pathogenic impact of e-Cig vaping and TS in a side by side comparative study and evaluate in vivo the effect of prophylactic versus therapeutic administration of metformin in reducing TS or e-Cig vaping - promoted cerebrovascular impairment and/or post-ischemic neuronal damage.	\$191,250	\$413,075
Fabia Ursula Battistuzzi Department of Biological Sciences	Michigan Space Grant Consortium/ University of Michigan	Effects of Microgravity on Genomic Variability. Microgravity studies are essential to understand how microorganisms change over time when exposed to environmental stress during space missions. Our approach will be to determine the underlying evolutionary process of accumulations of mutations that leads to these changes. This approach will enable better predictions of how genetic variability accumulated during space missions may lead to the emergence of new properties in bacteria.	\$5,000	\$5,000

Grants and Contracts Report for Period March 1 - April 30, 2021

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Luis Villa Diaz Department of Biological Sciences	Michigan Space Grant Consortium/ University of Michigan	Use of Simulated Microgravity to Determine Molecular Signaling Enhancing Self-Renewal of Pluripotent Stem Cells. This study will compare the patterns of accumulation of mutations (rate and location) between organisms grown at normal gravity and in simulated microgravity.	\$5,000	\$5,000
Ziming Yang Department of Chemistry	Michigan Space Grant Consortium/ University of Michigan	Reactivity and stability of amides in habitable hydrothermal environments. This project aims to investigate the roles of important dissolved metal ions in hydrothermal reactivity and stability of amides, with a goal of improving our understanding on amide hydrothermal chemistry.	\$5,000	\$5,000
Evan Trivedi Department of Chemistry	Michigan Space Grant Consortium/ University of Michigan	Rare-earth 'Salen' Phosphors as Up-converting Antennae for Photovoltaics. This project herein entails the synthesis and photophysical characterization of a set of heterobimetallic salen complexes containing one transition metal and one rare-earth lanthanide. Our main goal is to swap zinc with palladium and study the implications on energy transfer pathways to further develop this platform as up-converting materials for photovoltaics.	\$3,000	\$3,000

Grants and Contracts Report for Period March 1 - April 30, 2021

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Evan Trivedi Department of Chemistry	Michigan Space Grant Consortium/ University of Michigan	Structural Modification of Subphthalocyanines as Fluorescence Probes for Real-time Tumor Detection. Herein, we propose modifying the structure of boron subphthalocyanines in such a way that allows for the creation of a compound that has fluorescence in the NIR as well as biocompatibility for uptake in cancer cells. Development of such a fluorescent probe has potential for rapid, mobile, real-time detection of cancer that would be valuable for application in space.	\$3,000	\$3,000
Ilias Cholis Department of Physics	Michigan Space Grant Consortium/ University of Michigan	Correlations of Cosmic Ray Data in Search of Spectral Features. Using recently released electron and positron high-energy cosmic-ray data, Dr. Cholis will perform a power-spectrum analysis and develop a cross-correlation technique to search for spectral features in these data. This work is innovative as it proposes implementing two techniques never before used on cosmic-ray measurements.	\$5,000	\$5,000

Grants and Contracts Report for Period March 1 - April 30, 2021

Principal Investigator	Awarding Agency	Title and Project Abstract	Award Amount	Total Award All Years
Wing-Yue Geoffrey Louie Department of Electrical and Computer Engineering	National Science Foundation	CRII: CHS: Healthcare Professionals Teaching Robots Communication Strategies for Effective Intervention Delivery. 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.	\$16,000	\$190,883
Laila Guessous Department of Mechanical Engineering	Michigan Space Grant Consortium/ University of Michigan	Michigan Space Grant Consortium Affiliate Operating Award. 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. Dr. Guessous is the Oakland University Affiliate and provides assistance to OU faculty and students seeking to apply for MSGC grants.	\$1,500	\$1,500
Ankun Yang Department of Mechanical Engineering	Michigan Space Grant Consortium/ University of Michigan	Design Lithium-Sulfur Battery with High-Energy Densities. This project aims to design lithium-sulfur battery with high-energy densities for potential applications in electric vehicles and aircrafts. This study will lead to an electrode design for future-generation lithium-sulfur batteries and a better fundamental understanding of the lithium-sulfur electrochemistry.	\$5,000	\$5,000
Total Awards			\$7,196,979	\$9,502,127