Michigan Memorial Phoenix Project (MMPP)

Seed Funding Program, 2018

The University of Michigan Regents resolved in 1948 that: "*…the University of Michigan create a War Memorial Center to explore the ways and means by which the potentialities of atomic energy may become a beneficent influence in the life of man, to be known as the Phoenix Project of the University of Michigan."*

To this end, the Advisory Board of MMPP administers a seed-funding program for research groups developing proposals for external support. MMPP Seed Funding guidelines are:

- Topics must conform to the mission of MMPP; non-nuclear/ atomic related proposals will not be accepted or reviewed, (e.g., wind energy). A list of funded projects from 2013 through 2017 follows this solicitation.
- Award size: maximum of $25 k per grant. It is expected that 3 grants (or $75k–equivalent) will be granted per year
- Period of performance: up to one year
- Eligibility: faculty, research faculty, emeritus faculty with student involvement; MMPP PI must verify eligibility to serve as PI for the proposed funding agency of major project
- Allowable support: student or postdoctoral salary, travel for research, related research equipment and supplies
- Disallowed expenses: Tuition, faculty salary, overhead charges
- Deadlines: proposals due on or by January 31, 2018
- Funding decisions announced in early April, 2018
- Proposal length is limited to 3 pages of text with 2-page CVs for each principal investigator (NSF, DoE, NIH or similar CV format; Cover page, abstract, CVs, budget and references not counted in 3-page proposal text limit)
- A progress report (2 pages or less) is required at conclusion of the project
- Proposals will be evaluated by the MMPP Advisory Board:

-Ronald Gilgenbach (Chair), Professor and Chair, Nuclear Engineering and Radiological Sciences Department, rongilg@umich.edu
- Mark Barteau, Director of the Michigan Energy Institute and Professor, Chemical Engineering Department
-Fred Becchetti, Professor Emeritus, Physics Department
-Yuni Dewaraja, Research Professor, Radiology Department
-Greg Moses, Professor of Engineering Physics, University of Wisconsin
-Sara Pozzi, Professor, Nuclear Engineering and Radiological Sciences Dept.
--Gary Was, Professor, Nuclear Engineering and Radiological Sciences Dept.

Application Cover Page for MMPP Seed Grant

This cover sheet and all proposal materials should be submitted as a single pdf file by 5:00PM, Jan. 31, 2018 to: Ms. Cherilyn Davis: brownsu@umich.edu

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Project Director Name/ Academic Rank/Department/ e-mail:

Co-Principal Investigator Names/Departments/e-mails:

Other faculty involved (and Department):

Number of students involved (specify as undergraduate or graduate):

Is project part of a UROP, REU or PhD project?:

Title of Project:

Statement of relevance to MMPP:

Amount of funding requested in this proposal; itemized budget should be attached (not counted in page limit):

Facilities/ space available:

Agency/agencies to which future proposal would likely be submitted:

Timeline of Work/ External proposal submission deadline:

Department Chair (or designate) Signature: _____

Abstract of Proposed Research: 300 words or less; attach as separate page (not counted in page limit):

MMPP Seed Grants Awarded in 2013 through 2017

2013

1) Attacking pain: Exploring new receptors for painkillers; Peter Scott (Radiology), James Woods (Pharmacology), Xia Shao (Radiology)
2) Making nuclear power plants safer; Yugo Ashida (Nuclear Engineering and Radiological Sciences), Jwo Pan (Mechanical Engineering)
3) Activated neutron analyses for a better understanding of energy storage mechanisms; Jason Siegel (Mechanical Engineering), Levi Thompson (Chemical Engineering)
4) Measuring a nuclear material inside a shielded container; Shaun Clarke (Nuclear Engineering and Radiological Sciences)

2014

1) Semiconductor Neutron Detector, Roy Clarke (Physics)
2) Targeted Beta-Particle (Iodine-131) Treatment Using Sonosensitive Emulsions; Morand Piert (Radiology)
3) Development of Multi-Modality Theranostic Nanoparticles; Xia Shao, (Radiology)

2015

Christine Aidala of the Department of Physics received funds to explore the development of a novel neutron detector for measurements at energies relevant to nuclear structure and reactions.

Michelle Kim of the Department of Radiation Oncology and **Aaron Mammoser** of the Department of Neurology received funds to conduct a prospective study on advanced nuclear imaging for radiation treatment planning in newly diagnosed glioblastoma, the most common and lethal primary brain tumor.

Marcian Van Dort and **Hao Hong**, both of the Department of Radiology, received funding to broaden diagnostic capability for mouse models of prostate cancer with a new prototype radioligand- a radioactive substance that bonds to receptors in the body more effectively than variants currently in use for prostate cancer imaging.

John Foster of Nuclear Engineering and Radiological Sciences Department received funds to explore the development of a test version of an efficient, low-power radioisotope system capable of providing low-power, long-lasting propulsion during missions to explore the edge of the solar system and beyond.

2016

Dr. Allen Brooks, Department of Radiology
"Deuterium Substitution of 4-methyl-7-((1-([^{11}C]methyl-1,2,3,6-tetrahydropyridin-4-yl)oxy)-2H-chromen-2-one to Optimize the Rate of Metabolic Trapping by Monoamine Oxidase Enzymatic Activity for Investigating Astrogliosis in Neurodegenerative Disorders"

Professor Fei Gao, Nuclear Engineering and Radiological Sciences Department
"Capability Development of Plasma Facing Materials in a Fusion Environment"

Assistant Professor Benjamin Viglianti, Department of Radiology
"Development of an intravascular PET Probe: Applications in Cardiac and Oncologic Imaging"

2017

Assistant Professor Brian Kiedrowski, "Application of machine learning to Monte Carlo particle transport"

Professor L. Jay Guo, "Methylammonium Lead Trihalide Perovskite Solution-Processable Semiconductor Detectors…"

Associate Professor Ryan McBride, "Development of a Dense Plasma Focus Neutron Source at the University of Michigan"

Assistant Research Scientist Angela Di Fulvio, "Scintillation detector for real-time dosimetry and beam monitoring in proton therapy"