Research Newsletter

A Message from the VCR:

Dear Colleagues,

Welcome to the March 2019 newsletter from the Office of the Vice Chancellor of Research.

Some news worth your attention.

- After consultations with the Policy Council, and discussions with Faculty Senate, my office has slightly amended the OSP Policy Memorandum-5 "Principal Investigator Eligibility." The revised document can be found here: https://sponsoredprograms.mst.edu/resources/policies
- We are starting a new event to allow our faculty to learn more about each other's research and possibly lead to collaborations: We Dig Research! Information about the event was sent to all faculty. The first meet up is on March 8, 3-5pm, at St. Pat's Ballroom, Havener 206A (doors open at 2:30; talks are 3-4pm; social hour 4-5pm).

Some additional reminders:

- AFOSR has announced its 2019 workshops and reviews. You can find the list here: https://community.apan.org/wg/afosr/w/researchareas/24083/workshops-and-reviews—-2019/
  They include reviews and workshops for Machine Intelligence, Electromagnetics, Multifunctional Materials for Defense, Materials for Extreme Environments, Biophysics, Control and Autonomy, etc.
- DARPA has scheduled a number of Colloquia, proposers' day, and webcasts related to AI: https://www.darpa.mil/events
- One last (maybe) reminder of ARL's Open House. To quote the website: "ARL's Open Campus initiative is a collaborative endeavor, with the goal of building a science and technology ecosystem that will encourage groundbreaking advances in basic and applied research areas of relevance to the Army. Through the Open Campus framework, ARL scientists and engineers (S&Es) will work collaboratively and side-by-side with visiting scientists in ARL's facilities, and as visiting researches at collaborators' institutions. Central to the research collaborations is mutual scientific interest and investment by all partners—ARL's Open Campus is not a funding opportunity." But it will lead to funding opportunities. Areas include: Analysis and Assessment, Information Sciences, Materials Research, Sciences for Lethality and Protection, Human Sciences, and Sciences for Maneuver.

Finally two important numbers: As of January 2019 our faculty submitted proposals requesting 6.8% fewer funds compared to the first 7 months of FY18 ($94.8M vs. $101.7M); but our awarded funds are up by 30% ($28M vs $21.5M). Great job everyone!

Office of the Vice Chancellor of Research January Summary

52
PROPOSALS SUBMITTED

44
FACULTY & STAFF RECEIVING AWARDS

$7.53M
IN SPONSOR DOLLARS AWARDED

INDUSTRY   FEDERAL   STATE   OTHER

Pivot Changes Web Address

On March 1, Pivot will be changing its web address from pivot.cos.com to pivot.proquest.com. The new ".proquest.com" address is already fully operational. **Addresses ending in ".cos.com" will not automatically redirect to the new address**. Be sure to change any saved links or bookmarks on Pivot by changing the ".cos" extension to ".proquest".
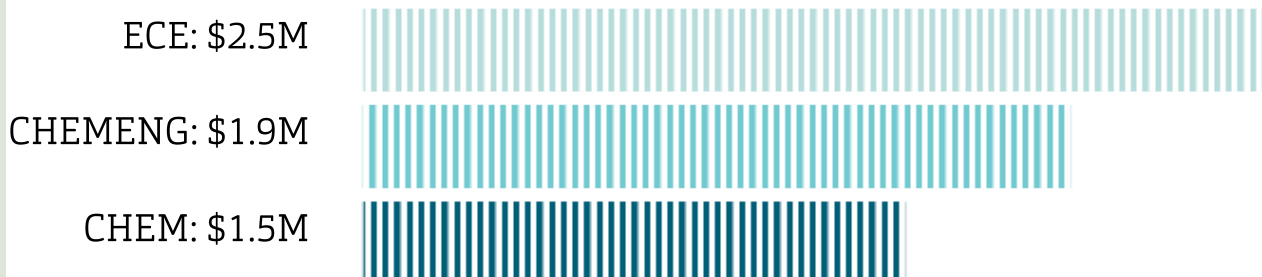
Registration for Neurotrauma Consortium

In a partnership with Phelps Health, the Acute Effects of Neurotrauma Consortium (AENC) has released details regarding their 2019 Acute Effects of Neurotrauma Consortium Conclave. Scheduled for April 4, this is an all-day event in Fort Leonard Wood, in which attendees will have the opportunity to "learn about the number of [TBIs]… that occur as a result of training" as well as to "spend the day with US Army leaders, including medical providers and the top TBI research leader for the US Army." Furthermore, attendees will be provided "an open forum" in which they may "pitch [their] TBI research ideas" and "get direct feedback from soldiers representing the three training brigades on post." Due to fort regulations, **those interested must register before March 29, 2019**. Contact Barry White at bwhite@aenc.us to register.

NSF Releases "Growing Convergence Research" Program Solicitation

The National Science Foundation has posted the latest program solicitation in their "Big Ideas" series. The Growing Convergence Research (GCR) solicitation is targeted at research that is both "driven by a specific and compelling problem" and that has "deep integration across disciplines." Of particular interest are "deep scientific questions or pressing societal needs." The first deadline is May 8, 2019, and the first Monday in February annually thereafter. If interested in responding to this solicitation, please contact the Office of Sponsored Programs for more information.

Highest Awarded Academic Departments — Jan. 2019

ECE: $2.5M

CHEMENG: $1.9M

CHEM: $1.5M

Recent Awards
December 2018

PI: *Magdy Abdelrahaman*
Department: Civil, Architectural & Environmental Engineering
Proposal Title: Preparing Interdisciplinary Professionals for Rebuilding Resilient Infrastructure of the Nation
Sponsor: U.S. Department of Education
Award: $199,000.00

PI: *Joel Burken*
Department: Civil, Architectural & Environmental Engineering
Proposal Title: The Missouri Transect: Climate, Plants, and Communities
Sponsor: National Science Foundation
Award: $147,713.00

PI: *Mariesa Crow*
Department: Electrical & Computer Engineering
Proposal Title: Development of Integrated multi-port power electronics
Sponsor: Oak Ridge National Laboratory
Award: $14,457.75

PI: *James Drewniak*
Department: Electrical & Computer Engineering
Proposal Title: CEMC Membership Agreement for Cisco 4—EMC
Sponsor: Cisco Systems, Inc.
Award: $70,000.00

PI: *Samuel Frimpong*
Department: Mining & Nuclear Engineering
Proposal Title: Inter-Disciplinary Program in Graduate Engineering Education for Creating Knowledge Engineers and Scientists for the Emerging US Automated Mining Systems toward Zero Fatality
Sponsor: U.S. Department of Education
Award: $284,750.00

PI: *Jonathan Kimball*
Department: Electrical & Computer Engineering
Proposal Title: Enabling Extreme Fast Charging with Energy Storage
Sponsor: U.S. Department of Energy
Award: $817,360.00

PI: *Aditya Kumar*
Department: Materials Science & Engineering
Proposal Title: Detection and Quantification of Phases Using Raman Spectra and Machine Learning—Participant Support
Sponsor: National Science Foundation
Award: $16,000.00

PI: *Robert Landers*
Department: Mechanical & Aerospace Engineering
Proposal Title: Doctoral Research and Training in Advanced Manufacturing
Sponsor: U.S. Department of Education
Award: $422,326.00

PI: *Sanjay Madria*
Department: Computer Science
Proposal Title: A Doctoral Program in Big Data, Machine Learning, and Analytics for Security and Safety
Sponsor: U.S. Department of Education
Award: $199,000.00

PI: *Xiong Zhang*
Department: Civil, Architectural & Environmental Engineering
Proposal Title: A Bio-Wicking System to Prevent Frost Heave in Alaskan Pavements: Phase II-Implementation
Sponsor: University of Alaska
Award: $44,518.00

Recent Awards
January 2019

PI: *Baojun Bai*
Department: Geosciences & Geological & Petroleum Engineering
Proposal Title: PGCCIC: Daqing Xinwantong Chemical Co., LTD
Sponsor: Daqing Xinwantong Science and Technology Development Co.
Award: $60,000.00

PI: *Baojun Bai*
Department: Geosciences & Geological & Petroleum Engineering
Proposal Title: PGCCIC: Occidental Permian, Ltd.
Sponsor: Occidental Permian, LTD
Award: $60,000.00

PI: *Baojun Bai*
Department: Geosciences & Geological & Petroleum Engineering
Proposal Title: PGCCIC: ConocoPhillips Company
Sponsor: ConocoPhillips Company
Award: $100,000.00

PI: *Laura Bartlett*
Department: Materials Science & Engineering
Proposal Title: Modeling the Microstructure and Carburizing Process of Pyroware 675
Sponsor: Penn State University
Award: $18,296.00

PI: *Laura Bartlett*
Department: Materials Science & Engineering
Proposal Title: Intensive Quenching to Produce High Performance Cast Parts
Sponsor: Advanced Tech International
Award: $81,491.00

PI: *Laura Bartlett*
Department: Materials Science & Engineering
Proposal Title: Cooperative Agreement: Advanced Steel Development Center
Sponsor: Army Research Office
Award: $150,000.00

PI: *Emily Bicker*
Department: Student Affairs
Proposal Title: Leach Theatre Presenting and Educating Series
Sponsor: Missouri Arts Council
Award: $9,952.00

PI: *Douglas Bristow*
Department: Mechanical & Aerospace Engineering
Proposal Title: CAMT: API Membership
Sponsor: Automated Precision, Inc.
Award: $30,500.00

PI: *Joel Burken*
Department: Civil, Architectural, & Environmental Engineering
Proposal Title: Phytoforensic Analysis for Hydrocarbon Pollutants (Site assessment for Alice Street)
Sponsor: AECOM Consultants, Inc.
Award: $11,500.00

PI: *Casey Burton*
Department: Chemistry
Proposal Title: Assessing Traumatic Brain Injury Noninvasively with Urinary Metabolites
Sponsor: Leonard Wood Institute
Award: $1,243,877.00

Recent Awards
January 2019

PI: *Jun Fan*
Department: Electrical & Computer Engineering
Proposal Title: CEMC Membership Agreement for Cisco-PDN
Sponsor: Cisco Systems, Inc.
Award: $70,000.00

PI: *Jie Huang*
Department: Electrical & Computer Engineering
Proposal Title: Internal Corrosion monitoring in steel pipes through magnetic field measurement
Sponsor: Jiangsu Hongkai Sensor Tech, LLC.
Award: $60,000.00

PI: *Jie Huang*
Department: Electrical & Computer Engineering
Proposal Title: Mild Traumatic Brain Injury Monitoring Through Hair-Like Pressure Sensors Equipped Smart Helmets
Sponsor: Leonard Wood Institute
Award: $2,253,618.00

PI: *Chulsoon Hwang*
Department: Electrical & Computer Engineering
Proposal Title: CEMC Membership Agreement for Asustek Computer, Inc.
Sponsor: Asustek Computer, Inc.
Award: $70,000.00

PI: *Bih-Ru Lea*
Department: Business & Information Tech.
Proposal Title: Influence of Cognitive Aptitude and Personality Traits on Performance of Learning an Enterprise Resource Planning System
Sponsor: Charter Communication
Award: $7,115.00

PI: *Nicholas Leventis*
Department: Chemistry
Proposal Title: SNM: Low-cost Large-scale Nanomanufacturing of Superinsulating Aerogels and Lightweight, mechanically-Strong Aerogels
Sponsor: Tufts University
Award: $136,614.00

PI: *Sanjay Madria*
Department: Computer Science
Proposal Title: Optimization of Electric Shuttle Fleet in an Automated Mobility District
Sponsor: Oak Ridge National Lab
Award: $33,490.00

PI: *F. Scott Miller*
Department: Materials Science & Engineering
Proposal Title: Standard Material Characterization, Analysis and Studies Using Missouri University of Science and Technology
Sponsor: Boeing Company
Award: $4,450.00

PI: *Michael Moats*
Department: Materials Science & Engineering
Proposal Title: Anodes and their interaction with Thiourea on slimes generation, deportment of group 15 elements and location of As, Sb, and Bi in the elctrorefining cell, and cathode structure and morphology
Sponsor: Atlantic Copper
Award: $60,000.00

PI: *Ronald O'Malley*
Department: Materials Science & Engineering
Proposal Title: Identification and transformation and precipitation mechanisms of bainite-based TRIP steels by in-situ electrical resistance analysis
Sponsor: POSCO
Award: $55,000.00

Recent Awards
January 2019

PI: *Henry Pernicka*
Department: Mechanical & Aerospace Engineering
Proposal Title: Enabling Formation Flying with Multi-Mode Micropropulsion
Sponsor: Space Dynamics Laboratory
Award: $55,000.00

PI: *Heath Pickerill*
Department: LTAP
Proposal Title: Missouri Local Transportation Assistance Program
Sponsor: Missouri Department of Transportation
Award: $300,000.00

PI: *Heath Pickerill*
Department: LTAP
Proposal Title: Missouri Rural Transit Assistance Program at the Missouri University of Science and Technology
Sponsor: Missouri Department of Transportation
Award: $260,000.00

PI: *Honglan Shi*
Department: Chemistry
Proposal Title: PerkinElmer Conference Travel Reimbursement for Dissemination with Sponsor Approval
Sponsor: Perkin Elmer Applied Biosys, Inc.
Award: $10,000.00

PI: *Honglan Shi*
Department: Chemistry
Proposal Title: Establishing Biological Significance of Pteridine Metabolites in Progressive Breast Cancer
Sponsor: NIH National Cancer Institutes
Award: $77,500.00

PI: *Joseph Smith*
Department: Chemical & Biochemical Engineering
Proposal Title: Collaboration in the Development of Programs in the New GUST College of Engineering
Sponsor: Gulf University for Science and Technology
Award: $1,912,401.00

PI: *Linda Turner*
Department: S&T Global
Proposal Title: ATF Explosive Engineering Courses
Sponsor: Bureau of Alcohol, Tobacco, and Firearms
Award: $214,529.04

PI: *Robert Woodley*
Department: Electrical & Computer Engineering
Proposal Title: Senior Design Project: Grippy Light
Sponsor: Pawtology, LLC.
Award: $1,000.00

PI: *Xiaodong Yang*
Department: Mechanical & Aerospace Engineering
Proposal Title: Negative Optical Torque Generation in Plasmonic and Dialectric Metasurfaces
Sponsor: Office of Navel Research
Award: $178,702.00

Selected Funding Opportunities

National Science Foundation (NSF)

Harnessing the Data Revolution (HDR): Institutes for Data-Intensive Research in Science and Engineering - Frameworks (I-DIRSE-FW)
Solicitation ID: 19-549
Full Proposal Due: 05-07-19

A Science of Science Policy Approach to Analyzing and Innovating the Biomedical Research Enterprise (SCISIPBIO)
Solicitation ID: 19-547
Full Proposal Due: 05-08-19

Growing Convergence Research (GCR)
Solicitation ID: 19-551
Full Proposal Due: 05-08-19

Harnessing the Data Revolution (HDR): Transdisciplinary Research in Principles of Data Science Phase I
Solicitation ID: 19-550
Full Proposal Due: 05-08-19

Improving Undergraduate STEM Education: Computing in Undergraduate Education (IUSE: CUE)
Solicitation ID: 19-546
Full Proposal Due: 05-09-19

Understanding the Rules of Life: Building a Synthetic Cell
Solicitation ID: 18-599
Full Proposal Due: 05-13-19

ADVANCE: Organizational Change for Gender Equity in STEM Academic Professions (ADVANCE)
Solicitation ID: 19-552
Letter of Intent Due: 05-15-19

Signals in the Soil (SitS)
Solicitation ID: 19-556
Full Proposal Due: 05-15-19

Faculty Development in the Space Sciences
Solicitation ID: 19-558
Full Proposal Due: 05-24-19

National Institutes of Health (NIH)

NIDCR Small Research Grants for Data Analysis and Statistical Methodology Applied to Genome-wide Data (R03)
FOA Number: PAR-16-070
Application Due: 05-08-19

Department of Defense (DoD)

Long Range Broad Agency Announcement (BAA) for Basic and Applied Research
Sponsor ID: N00173-18-S-BA01
White Paper and Full Proposal Due: 05-09-19

Selected Events

Defense Advanced Research Projects Agency (DARPA)

Artificial Intelligence Colloquium
March 6-7, 2019; Alexandria, VA

Air Force Office of Scientific Research (AFOSR)

2019 2nd Semiannual Government Workshop on 2D Materials
March 22, 2019; Arlington, VA

2019 Workshop on High-Pressure Spectroscopy of HC Combustion
April 15-16, 2019; Arlington, VA

2019 Technical Exchange on UWBG Semiconductors
May 14-19, 2019; Arlington, VA

2019 Multifunctional Materials for Defense Workshop
August 26-30, 2019; Arlington, VA

2019 Radiation-Electron Interaction Workshop
October 7-9, 2019; Arlington, VA

2019 Radiation-PH Interaction (TBD) Workshop
October 22-24, 2019; Arlington, VA

Acute Effects of Neurotrauma Consortium (AENC)

2019 Acute Effects of Neurotrauma Consortium (AENC) Conclave
April 4, 2019; Fort Leonard Wood, MO

National Science Foundation (NSF)

IUCRC: Advanced Electronics through Machine Learning (CAEML) IAB Meeting
April 24-25, 2019; Raleigh, IL

Spring 2019 Grants Conference
May 20-21, 2019; Los Angeles, CA

National Institutes for Health (NIH)

NIH Regional Seminar on Program Funding and Grants Administration
May 15-17, 2019; Baltimore, MD

Funding Search Engines

Federal Grants World
https://grants.gov
PIVOT—Funding Opportunity Database
https://pivot.proquest.com
National Science Foundation
https://www.nsf.gov/funding/index.jsp