

Louisiana Tech University



BREEZE BULLETIN

Office of University Research (<http://research.latech.edu>)

A strong passion for any object will ensure success, for the desire of the end will point out the means.

*William Hazlitt
(1778-1830, British essayist)*

TABLE OF CONTENTS

New Grants Awarded	2
BoR EPSCoR Pfund	2
Proposals Submitted	3-7

2013-14 TECH FRINGE RATES

Please note current 2013-14 Fringe Rates below:

Faculty/Unclassified/Post Doc: 46.47%
 Civil Service: 51.27%
 Temporary/Part-time: 9.96%
 DROP: 19.97%

Click the following link to download a pdf chart: http://research.latech.edu/files/documents/2013-14_fringe_benefit_rates.pdf.

IN-HOUSE WORKSHOPS

For a full list and descriptions of in-house workshops, go to http://research.latech.edu/resources/training_workshops/latech_workshops.

OUR RESOURCES

For a current routing form, F&A Waiver, budget templates and contract forms, go to OUR forms and downloads page:

http://research.latech.edu/resources/forms_downloads.

Alliance for Science & Technology Research in America (ASTRA) STEM Report for 2014

Source: <http://www.usinnovation.org/>
 April 14, 2014

ASTRA is a unique collaboration of individuals and organizations drawn from industry, professional and trade associations, universities, and research centers united in common cause to increase federal funding for the physical, mathematical & computational sciences and engineering. ASTRA was founded in 2000 by a group headed by Dr. Mary Good, former Undersecretary for Technology Policy at the U.S. Department of Commerce and currently Dean of the Donaghey School of Information Science and Engineering at the University of Arkansas. From a core group of about 18 key corporate, university and nonprofit leaders, ASTRA has expanded its membership to nearly 130 organizations and a U.S. and global network of about 45,000 individual scientists, engineers, researchers, economic development experts and policy makers in general. ASTRA's Board of Directors represent America's top science & technology companies, leading academic research institutions, scientific & engineering professional and trade associations, research laboratories, and many smaller businesses and entrepreneurial companies.

State STEM 2014 (R&D STEM & Data) Report cards to help illustrate the importance of scientific research to state and local economies, job growth, innovation, our standard of living, and national security. One highlight of this work is a feature which ranks states according to a variety of indices provided by U.S. Census Bureau, the U.S. Bureau of Labor Statistics, TechAmerica, The Information Technology & Innovation Foundation, and several other organizations which track specific trends in this area.

<http://www.usinnovation.org/state-innovation-vital-signs>.

Louisiana report: http://www.usinnovation.org/state/pdf_cvd/CVD2014Louisiana.pdf.

NEW GRANTS AWARDED

PI/Co-PI	Title	Funding Agency	\$ Awarded
Arun Jaganathan	<i>Analysis of Flow Characteristics Within a Vortex Drop Structure</i>	IPEX, Inc.	18,037
December 2013			Total: \$74,037
McKim/Saber/ Wang/Allouche/ Wasiudden	<i>Participating as a Member in a Consortium Led by Univ. of Oklahoma for Regional University Transportation Center (UTC) Program Grants</i>	USDOT La. Workforce Commission	128,300
David Merchant	<i>Green Clinic Consortium #3</i>		114,118
Erez Allouche	<i>The Development of a Manufacturing Process for High Performance Proppants Using Fly-Ash Based Geopolymer Technology</i>	BoR	50,000
Don Liu	<i>Model Development in SIMULOCEAN for Northern Gulf Coastal Hazard Collaboration</i>	BoR/NSF	20,000
Lindsey Vincent	<i>MISE RIPPLE Sub-grant through SUBR</i>	US Dept of Edu/ LaSIP	24,994
Davis Harbour	<i>Superconductor Filament Fabrication for Advanced Propulsion Research</i>	NASA/LaSPACE	4,700
January 2014			Total: \$342,111
Erez Allouche	<i>Tensile Creep Testing of Aqua-Pipe Liner as Per Astm D 2990</i>	Sanexen	10,736
David Mills	<i>Nanoenhanced Bone Cement with Sustained Releases and Enhanced Material</i>	BoR	19,875
Teresa Maness	<i>Secondary Immune Response & Immunological Memory in a Free-living Vertebrate</i>	BoR/Pfund	10,000
Long Que	<i>On-Chip Single Cell Optical Transfection</i>	BoR/Pfund	10,000
February 2014			Total: \$50,611
Box Leansuksun	<i>An Experiment in Putting a Real World Experience in the Classroom</i>	Chemtura	18,296
Jeff Shultz	<i>Research Contract for Graduate Research Assistants</i>	EPA	7,000
Laura Gentry	<i>Development of an Objective Temperament Test for Horses</i>	BoR/Pfund	10,000
Jamie Newman	<i>The Role of Mediator in Regulating the State of Menseschymal Stem Cells</i>	BoR/Pfund	10,000
Marc Gibson	<i>Louisiana Forest Products Development Center at Louisiana Tech University</i>	LSUAC	28,066
Arun Jaganathan	<i>Development of Novel Magnetostriction Based Sensing for Health Monitoring of Critical Structures</i>	BoR/Pfund	10,000
March 2014			Total: \$83,362
			2013-14 YTD: \$6,091,459

BoR EPSCoR Funding Announcement

Pilot Funding for New Research (Pfund): A Louisiana Experimental Program to Stimulate Competitive Research Program (EPSCoR). Solicits seed-grant science and engineering (S&E) research proposals from the State's tenured and tenure-track faculty members seeking funding to demonstrate an innovative or novel concept that can result in attracting federal funds.

- Provides up to \$10,000 in research funding;

- **Proposal deadline: June 12, 2014** on LOGAN (Louisiana Online Grant Automation Network). For a copy of the rfp, go to: <https://web.laregents.org/2014/04/22/pilot-funding-for-new-research-pfund-rfp/>.

PROPOSALS SUBMITTED

* FILE #	PI	Co-PI 's	TITLE	AGENCY	\$ Requested
14-144	Strimbu, Bogdan	Strimbu, Bogdan	Managing for Sustainable Forest Ecosystems Under Threat From Projected Climate Change and Invasive Species	DoD	799,699
14-145	Allouche, Erez	Montes, Carlos	In-situ Casting of Structural, Insulating, Radiation-Shielding Geopolymer Panels from Lunar Regolith	NASA	0
14-146	Swambom, Michael	Tims/Mhire	Cyber Discovery 1.0	Cyber Innovation Center	233,220
14-147	Shultz, Jeff		Research Contract for Graduate Research Assistants	EPA through Innovation Enterprise through OrganicNano	7,000
14-148	Sims, Tonya		NELA Komen: Nursing and Service Learning Partnerships	NELA/Susan G. Komen	2,806
14-149	Atkison, Travis		TWC: Small: Power Grid Malicious Detection via Knowledge Discovery on State Parameter Observations	NSF	488,898
14-150	Gourd, Jean	Atkison, Travis	LaTech's Center of Academic Excellence, Cyber Operations	NSA	0
14-151	Weiss, Leland		Low Cost Natural Gas Storage for Vehicle Use	LTRC	30,000
14-152	Jaganathan, Arun	Simicevic, Neven	A Novel Magnetostriction Based Sensing Technology for Rapid Condition Assessment of Bridge Decks	LTRC/TIRE	30,000
14-153	Weiss, Leland		SOCOM: Study and Analysis of Alternative CI Engine Cooling Systems	Radiance	50,000
14-154	Choi, Ben		Humanoid Robot Interactions by Motion Descriptions and Dialogue	NSF	307,712
14-155	Wang, Jay	Patterson, W.	Sustainability Study of the Louisiana Coastal Wetlands with the Protection and Restoration Strategies	NSF	1,115,641
14-156	Moore, Brandon	Murray, Teresa	Structural and Functional Evolution of the Phallus in the Archosaur Lineage	NSF	0
14-157	Leangsuksun, C.		An Experiment in Putting a Real World Experience in the Classroom	Chemtura	4,000
14-158	Gourd, Jean		Biologically Inspired Threat Identification and Mitigation in MANETs	Noetic Strategies, Inc.	45,000
14-159	Gentry, Laura		Biotin and Methionine Supplementation in Horses: Effects on Hoof Health and Growth	Lloyd, Inc.	0
14-160	Liu, Don	Allouche/Hindmarsh	Innovative Geo-Reef Structures for Wave Attenuation, Coastal Protection, and Flood Risk	NSF	940,637
14-161	Derosa, Pedro		Identity Development Evaluation of African American Science Students (IDEAAS)	NSF	192,762
14-162	Mhire, Jeremy	Tims/Swanbom	Cyber Discovery 2.0	Cyber Innovation Center	164,910
14-163	Liu, Don	Moore, Arden	Multiscale Modeling, Design, and Evaluation of Surfaces with Micro/Nanoscale Features for Enhanced Phase Change Heat Transfer	NSF	335,927
14-164	Wasiuddin, Nazimuddin	Randall, Kary	Pavement Maintenance Guidelines for General Aviation Airport Management	Transportation Research Board	300,000

(*Missing File #'s denote withdrawn proposals)

PROPOSALS SUBMITTED (CONT'D FROM PAGE 3 . . .)

* FILE #	PI	Co-PI 's	TITLE	AGENCY	\$
14-165	Radadia, Adarsh		Point-of-Care Microelectronic Diagnostics for Early Phase Rickettsial Infections	LBRN/INBRE	60,000
14-166	Dua, Sumeet		LBRN - Admin	LBRN/INBRE	33,654
14-167	Dua, Sumeet		LBRN - Mentor	LBRN/INBRE	104,022
14-168	Atkison, Travis		CPS: Breakthrough: Correlating Physical and Cyber System Perspectives for High Confident Intrusion Detection	NSF	485,228
14-169	Dua, Prena		Rule-based Data Mining for Knowledge Discovery in Alzheimer's Disease	INBRE/LBRN	108,563
14-170	Mainardi, Daniela	Murray, Erica	Catalysis by Design: Innovative, High Performance, Low Cost Engineered Materials for Solid Oxide Fuel Cell Cathodes	DoE	94,260
14-171	Orr, Marisa	Hall/Carpenter	Owning Engineering: A Longitudinal Mixed-Methods Study of Student-Owned Laboratories	NSF	1,381,086
14-172	Orr, Marisa		Collaborative Research: Enhancing Problem-and-Project-Based Facilitation in First-Year Engineering Instructors	NSF	45,657
14-173	Jones, Steven		Effects of Spatially Distributed Nitric Oxide on Platelet Adhesion	NIH	25,000
14-174	Bishop, Thomas		Computational Tools & Protocols for Modeling Epigenetic Modifications of Chromatin	NIH	
14-175	Gurupur, Varadraj P.		Dementia and Delirium Analysis and Research Tool	NIH	96,709
14-176	Allouche, Erez	Alam, Sharuav	Tensile Creep Testing of Aqua-Pipe Liner as Per Astm D 2990	Sanexen Environmental Services, Inc.	10,736
14-177	Hollins, Bryant		A Capillary Electrophoresis Method for Detecting Protein-Centered Radicals	National Institute for Neurological Disorders & Stroke	54,352
14-178	Allouche, Erez	Alam, Sharuav	Creep Testing of a Structural Liner as per ASTM D 2990 Under Flexural and Tensile Load Conditions	Applied Felts, Inc.	13,420
14-179	Lvov, Yuri	DeCoster, Mark	SusChEM: Toxicity of Halloysite Clay Nanotubes From Cells to Microworms	NSF	300,000
14-180	Murray, Teresa		GRIN Lens Implant for Preclinical in vivo Documentation of TBI Drug Effects	NIH	318,769
14-181	DeCoster, Mark	Arumugam/Siddiqui	Transforming Traumatic Brain Injury Detection Technologies Through Innovative Diamond Biosensors	Sigma Nine	495,217
14-182	Atkison, Travis	Gourd, Jean	Louisiana Tech University's Scholarship for Service Program	NSF	2,762,414
14-183	Basinger, Dawn		TechLinc: A Clinically Based Teacher Preparation Pilot	DOEdu	12,000
14-184	Wiess, Leland	Lvov, Yuri	Naturally Occurring Nano-Material Use for Thermal Storage and Energy Savings	NSF	288,208

(*Missing File #'s denote withdrawn proposals)

(Cont'd on page 5)

PROPOSALS SUBMITTED (CONT'D FROM PAGE 4 . . .)

(*)FILE #	PI	Co-PI 's	TITLE	AGENCY	\$
14-185	Ross, William	Strimbu, Bogdan	Integrated Management of Threats to Mayhaw (Crataegus Spp.) Productivity in the Southeast	USDA Nifa	492,801
14-186	Dickson, James	Bryan, Melinda	Additional Support for McIntire-Stennis Project LAZ00076: Bird Communities of Lincoln Parish Park and Effects of Timber Harvest & Hearing Amplification on Birds and Bird Detections	German Pellets GmbH	5,000
14-187	Boyras, Gular		Trauma, PTSD and Alcohol Related Attentional Bias Among Trauma Exposed College Students	NIH	80,000
14-188	Jaganathan, Arun	Simicevic, Neven	New Non-Destructive Testing Concept for Health Monitoring of Critical Structures	NSF	400,939
14-189	Allouche, Erez	Alam, Sharuav	Experimental Evaluation & Validation of a New PVC Liner	IPEX	35,990
14-190	Manning, Elizabeth	Lopez/Cummings/King	Powerful Instruction Through Interactive Read Alouds & Workshop	LaSIP	162,801
14-191	Lopez, K.	Manning/Cummings/King	Building Sustainability: Powerful Instruction Through Interactive Read Alouds, Literacy Stations, and Workshop Model (Year Two-Continuation)	LaSIP	71,382
14-192	Talton, Carolyn	Vincent/Patterson	Project InCITE	LaSIP	196,602
14-193	Deese, Bill	Vincent/Madden	The 5E Learning Cycle Science Heruristic Approach to Teaching Chemistry	LaSIP	193,825
14-194	Heiden, Kathleen		Fashion and Film: College and Career Ready Graduates	BESE	189,724
14-195	Newman, Jamie		The Role of Mediator in Regulating the State of Mensenchymal Stem Cells	LBRN/INBRE	19,000
14-196	Lusby, Aaron		Determinants of a Successful Rural Economy	USDA NIFA	500,000
14-197	Schillinger, Don	Vincent/Crittenden	STEAM Power	LaSIP	182,539
14-198	Vincent, Lindsey	Madden, Diane	Project LST Subcontract with SUBR	LaSIP	56,978
14-199	Wang, Jay		Thermal Impact on Sustainability of Energy Piles Under Cycles of Heating & Cooling Process Considering Thermo-Hydro-Mechanical Coupling	nsf/CMMI	176,876
14-200	Hollins, Bryant		Oxidized Brain Protein Profiles as a Marker for Alzheimer's Progression	Alzheimer's Association	100,000
14-201	Wilson, Chester		Highly-Ordered Nanostructured Dipole Antenna Arrays Microfabricated Via Electrospinning	CIA	359,999
14-202	Wilson, Chester		2D/3D Bulk Manufacture of Nanostructured Metamaterials for Infrared Spectra: Theory to Application	CIA	359,999
14-203	Wilson, Chester		Nanomanufactured Catalyst for the Production of Hydrogen Via Solar Thermal Gas Splitting	CIA	359,999
14-204	Tyree, Mike		The Impact of Genotype Selection on Severe Drought Tolerance and Recovery in Mid-Rotation Loblolly Pine (Pinus taeda L.)	USDA Nifa	

(*Missing File #'s denote withdrawn proposals)

(Cont'd on page 6)

PROPOSALS SUBMITTED (CONT'D FROM PAGE 5 . . .)

(*)FILE #	PI	Co-PI 's	TITLE	AGENCY	\$
14-205	Bishop, Thomas		The Interactive Chromatin Modeling Toolkit	NIH	300,000
14-206	Dua, Prerna	Chowriappa, Pradeep	Investigation of Alzheimer's Disease and AMD Comorbidity Using Feature Mining	NIA/NIH	250,000
14-207	Mills, David		Nanoenhanced Bone Cement with Sustained Releases and Enhanced Material Properties	NIH	394,879
14-208	Allouche, Erez	Montes, Carlos	Use of Geopolymer Mortar and Concrete as a Primary Construction Material for Co2 Capture Processes	NineSigma	64,660
14-209	Leangsuksun, C.		Collaborative Research: Enabling & Exploiting Parallelism in High Energy Physics	NSF	408,128
14-210	Weiss, Leland	Moore, Arden	Novel Two-dimensional Materials for Energy Applications	BoR/DOE/EPSCoR	642,685
14-211	Basinger, Dawn	Crittenden, Kelly	STEM-PLUS: LaTech Noyce Scholarship Program for Secondary Teachers	NSF	796,436
14-212	Lvov, Yuri		Natural Tubule Clay Carriers for Catalytic Nanoparticles	ACS Petroleum Research Fund	110,000
14-213	Brust, Matthias	Strimbu, Bogdan	Tree Localization And Biomass Determination With Autonomous Micro UAV Swarms	USDA Nifa	485,757
14-214	Wick, Collin	Ramachandran, Ramu	Center for Open Source Materials, Interfaces and Chemistry Simulations (COSMICS)	BoR/EPSCoR	1,200,535
14-215	Leangsuksun, C.		Foundational Support for Resilient Exascale Computing	BoR/EPSCoR	492,000
14-216	Wilson, Chester	Derosa, Pedro	Microbial Lipids to BioFuels Process	BoR/EPSCoR	899,999
14-217	Madden, Diane	Vincent, Lindsey	Project Conserve the Wetlands	LDWF/LEEC	2,494
14-218	Vincent, Lindsey	Madden, Diane	Project A-LINE, Ouachita Parish MSP	La. Dept. of Edu	95,415
14-219	Radadia, Adarsh		Synthesis and Characterization of Graphene Films Obtained via Atmospheric Pressure Chemical Vapor Deposition	BoR/SURE	4,500
14-220	Lvov, Yuri		Building an Internationally Competitive Neutron Scattering Research Program in Louisiana	BoR/EPSCoR	225,000
14-221	Atkison, Travis	Gourd/Tims	Cyber-ICE: Louisiana Tech University's IC Center for Academic Excellence in National Security Studies	DIA/DOD	1,517,856
14-222	Evans, Katie		Preparation for Industrial Careers in the Mathematical Sciences (PIC Math) Application	PIC Math	5,000
14-223	Hollins, Bryant	McDaniel/Buboltz	Protein Carbonylation as a Target for Improving Cognitive Performance During Sleep Deprivation	McKnight Foundation	300,000
14-224	Shepard, Scott		Quantum State Optimization and a Minimally Resourced Quantum Sensor	ARO	157,599
14-225	Maness, Teresa		Overwinter Survival of Henslow's Sparrows In Louisiana	LDWF	61,835
14-226	Maness, Teresa		Tissue Metal Analysis of Wintering Waterfowl in Louisiana	LDWF	58,249

(*Missing File #'s denote withdrawn proposals)

(Cont'd on page 7)

PROPOSALS SUBMITTED (CONT'D FROM PAGE 6 . . .)

FILE #	PI	Co-PI 's	TITLE	AGENCY	\$
14-227	Shepard, Scott		Quantum Sensing Enhancements for Astronomical Observation	LaSPACE/EPSCoR	34,669
14-228	Weiss, Leland		SURE Student Application-Amara Uyanna	BoR/EPSCoR	4,500
14-229	Dai, Weizhong		The Generation of Coherent Superpositions of Solitons and Vortices in Bose-Einstein Condensates	BoR/EPSCoR	33,263
14-230	Ford, Alicia		Linking HIV-Related Cognitive Deficits with Structural Brain Changes & Plasma Biomarkers of Vascular Dysfunction	LSUHSC	25,000
14-231	Arumugam, Prabhu		Development of Carbon Nanotube Based Multifunctional Electrochemical Probes for Single Cell Analysis	BoR/EPSCoR	29,986
14-232	Phoha, Vir		Fault Diagnosis & Resilient Control for Safety & Performance Enhancement in Nuclear Power Plants	DoE	60,000
14-233	Moore, Arden		Flexible, Transparent Glucose Sensors Based on CuO Nanowire Networks	BoR/EPSCoR/SURE	4,500
14-234	Selmic, Rastko		System for Classification of 3D Dynamic Hand Gestures	BoR/EPSCoR/NASA	40,576
14-235	Wasiuddin, Nazimuddin		Collaborative Proposal: Ductility of Extreme Temperature Binders by Shear & Extensional Rheology	DOT	50,000
14-236	Wasiuddin, Nazimuddin		Collaborative Proposal: Development of a Fracture-Based Test to Evaluate Moisture Sensitivity of Asphalt Mixtures	DOT	20,000
14-237	Lvov, Yuri		Supramolecular Materials & Manufacturing Alliance (SUMMA): Building Advance Materials in Louisiana Through Effective Integration of Microfluidic Platforms	BOR/EPSCoR/RII	550,000
14-238	Wasiuddin, Nazimuddin		Collaborative: Performance-Based Test Methods for Climate Adaptive Chip Seals	DOT	35,000
14-239	Wasiuddin, Nazimuddin		Collaborative: Highly Reflective Asphalt Pavement for Urban Heat Island	DOT	20,000
14-240	Wang, Jay		Impact of Severe Drought on Compacted Expansive Clays (Subgrade) in Northern Louisiana	SPTC	54,542
14-241	Tewari, Sanjay	Hall/Pumphrey	Technology-Rich Transportation Engineering Projects	SPTC	131,627
14-242	Heiden, Kathleen	Rutledge, Julie	AAFCS Undergraduate Program Accreditation: What Affects Unit's Decision?	AAFCS	4,990
14-243	Gentry, Laura		The Development of an Objective Temperament Test in Horses	BOR/EPSCoR/SURE	4,500
14-244	Moore, Arden		Selective Area Nanostructure Surface Modifications for Enhanced Phase Change Heat Transfer	DARPA	0
14-245	Wasiuddin, Nazimuddin		Collaborative Proposal: Ductility of Extreme Temperature Binders by Shear & Extensional Rheology	LTRC	50,000
14-246	Dai, Weizhong		Advanced 3D Computational Model & Experimental Verification for the Development of Drug-eluting Coatings for Arterial Pharmacokinetics	LSUHSC	24,944

(*Missing File #'s denote withdrawn proposals)