

Louisiana Tech University



BREEZE BULLETIN

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

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In order to attain the impossible, one must attempt the impossible.

Miguel De Cervantes
 (1547-1616, Spanish novelist, dramatist, poet)

BOARD OF REGENTS FALL 2010 SUPPORT FUND DEADLINES

SAVE THE DATE!! NSF DAY @ LATECH NOVEMBER 30, 2010

The National Science Foundation and Louisiana Tech will be holding a one day workshop on **Tuesday, November 30th, 2010**. This workshop is designed for researchers and educators less experienced in proposing to the NSF. The workshop will provide an overview of the Foundation, its mission, priorities and budget. It will cover the NSF proposal and merit review process and NSF programs that cut across disciplines. Additionally, representatives from the seven NSF directorates will be present. Registration information will be available soon.

Fall is quickly approaching which also means the Board of Regents Sponsored Programs Office is gearing up for the 2010-2011 round of research proposals to their various funding programs. Below is a brief overview of deadlines and eligible disciplines. Potential Applicants should reference Taxonomy of Disciplines for each rfp for lists of sub-disciplines included. For more information and requests for proposals, go to: <http://web.laregents.org/programs/borsf-programs/> or contact Beth Free (bfree@latech.edu) in the LaTech Office of University Research, 318-257-5075.

- **Traditional and Undergraduate Enhancement - Proposals due: 10/25/10.**
Eligible Disciplines: Business, Chemistry, Education, Mathematics, Physics/Astronomy.
- **Industrial Ties (ITRS)- Mandatory Notices of Intent due: 9/20/10. Proposals due: 11/1/10. Disciplines eligible every year:** Biological, Computer & Information Services, Earth & Environmental Sciences. **Disciplines eligible 2010-11:** Agricultural, Engineering A (Chemical, Civil, Electrical, etc.), Mathematics, Physics/Astronomy, Social Sciences.
- **Research Competitiveness (RCS) - Mandatory Notices of Intent due: 9/20/10. Proposals due 11/8/10. Eligible disciplines: same as ITRS.**
- **Awards to Louisiana Artists & Scholars (ATLAS) - Mandatory Notices of Intent due: 10/8/10. Proposals due: 11/22/10. Eligible disciplines: All projects in Arts, Humanities, and Social Sciences.**
- **Graduate Fellows - Proposals due 11/15/10. Disciplines eligible every year:** Biological Sciences, Chemistry, Computer Sciences, Engineering A and B, Health/Medical Sciences, Physics/Astronomy. **Disciplines eligible 2010-11:** Agriculture, Business, Education (including Literacy), Mathematics.

CAMPUS CLOSURE 9/6/10

Labor Day



Other Board of Regents grant programs include **EPSCoR Programs:**

Links with Industry and National Labs (LINK): facilitates science and engineering research, education, and training opportunities for faculty, post-doctoral researchers, undergraduate and graduate students.

Travel Grants for Emerging Faculty (TGEF): established to assist emerging faculty (tenure track but non-tenured) in the science and engineering disciplines by providing travel funds needed to further their research and build strong collaborations

Pilot Funding for New Research (Pfund): designed to stimulate and support science and engineering faculty in their exploration of novel research.

Speaking of Science (SOS): provides students in every type of school—urban and rural, poor and rich, public and private—exposure to the best researchers in the State.

Full information on these programs can be found at <http://web.laregents.org/programs/epscor-programs/>.

NEW GRANTS AWARDED

| PI/Co-PI | Title | Funding Agency | \$ Awarded |
|---------------------------|--|--------------------------|--------------------|
| T. Grafton/R.Boyd | <i>Project Northland - Claiborne Parish</i> | USDHH thru OAD | 34,650 |
| Beer/Madden/Talton | <i>Ouachita Parish/Louisiana Tech MSP: Project Teams Year 3</i> | US Dept. of EDU | 29,711 |
| Les Guice | <i>CenturyLink Telecom Program & Professorship</i> | US Dept. of Econ. Dev. | 900,000 |
| Rebecca Giorno | <i>Role of Bacillus Anthracis Exosporium in Germination</i> | NIH thru LBRN | 19,280 |
| Dua/Napper | <i>Louisiana Biomedical Research Network (LBRN) - LA Tech</i> | NIH thru LBRN | 145,859 |
| Alan Chiu | <i>Louisiana Biomedical Research Network (LBRN) - LA Tech</i> | NIH thru LBRN | 112,408 |
| June Feng | <i>Louisiana Biomedical Research Network (LBRN) - LA Tech</i> | NIH thru LBRN | 112,500 |
| Prerna Sethi | <i>Louisiana Biomedical Research Network (LBRN) - LA Tech</i> | NIH thru LBRN | 112,500 |
| Collin Wick | <i>Computational Design of CO2-Philic Hydrocarbon Polymers to Promote</i> | ACS Petroleum | 50,000 |
| June 2010 (cont'd) | | | 1,924,351 |
| | | | 2009-10 YTD |
| | | | 14,994,568 |
| Erez Allouche | <i>ASTM Scholarship: E. Ivan Diaz-Loya</i> | ASTM International | 7,500 |
| Mike Shipp | <i>Comprehensive Center for Rehabilitation Technology</i> | LRS thru DOEducation | 3,806,999 |
| Beer/Deese/Madden | <i>The Best of Ripple III</i> | BESE thru LaSIP | 15,000 |
| Talton/Patterson/Beer | <i>Beacon Math Project II</i> | BoR/LaSIP/DoEdu | 136,923 |
| Box Leangsuksun | <i>Information Analysis and Visualization Enhancements for Resilience</i> | US Dept. of Energy | 37,579 |
| Chester Wilson | <i>Bergeron GSRA: Development of Mitro-Rockets for Remote Sensing</i> | NASA thru LaSPACE | 5,000 |
| Niel Crews | <i>LaSPACE: GSRA for Collin Tranter</i> | NASA thru LaSPACE | 5,000 |
| Beer/McCoy | <i>EPAS On-Line Professional Development Course 2010</i> | BoR | 21,000 |
| Les Guice | <i>Louis Back-Up Server</i> | LSU | 7,344 |
| Allouche/Alam | <i>Testing of the Bulldog Restraint System Under Biaxial Loading Condition</i> | S&B Tech. Products | 12,200 |
| DeCoster/Lvov/Yule | <i>Nanomaterials Safety Lab: Research Integrated with Service and Educa-</i> | BoR/ENH | 64,965 |
| Dillaway/Tyree | <i>Physiological Ecology Laboratory Grant</i> | BoR/ENH | 43,085 |
| Mark Guinn | <i>Howard Auditorium Rigging Enhancement</i> | BoR/ENH | 70,000 |
| Nasi Wasiudden | <i>Superpave Gyrotory Compactor for Highway Engineering Laboratory</i> | BoR/ENH | 33,926 |
| Alan Chiu | <i>Upgrade Undergraduate Biomedical Instrumentation Laboratory</i> | BoR/ENH | 24,512 |
| Shengnian Wang | <i>Diverging Flow Cell Electroporation to Facilitate in Vitro Biomolecule</i> | BoR/RCS | 141,269 |
| Mihaela Paun | <i>DNA Image Segmentation Methods and Statistical Modeling</i> | BoR/RCS | 113,554 |
| Palmer/Ramu/Gold | <i>Graduate Fellows in Engineering</i> | BoR/GF | 100,000 |
| Jones/Ramu/Guilbeau | <i>Graduate Fellows in Biomedical Engineering</i> | BoR/GF | 100,000 |
| Tommy Grafton | <i>Project Northland - Jackson, Lincoln, Claiborne Parish</i> | US DHH/OAD | 180,600 |
| Tanya Sims | <i>Increasing Breast Cancer Awareness through Service Learning</i> | Susan G. Komen Foun- | 528 |
| Simmons/Rea | <i>ULS Serve-Learn Conference</i> | CNCS/ULS | 3,023 |
| Evans/Napper | <i>Mathematical Modeling of Biological & Biomedical Engineering Process-</i> | NSF | 99,997 |
| Christie Fuller | <i>Building Indicators of Trust for Information Systems</i> | DoD/Oklahoma State | 77,256 |
| Yuri Lvov | <i>Tubule Nanocontainers for Corrosion Inhibitors</i> | NSF | 238,413 |
| July 2010 | | | 5,745,672 |
| James Nelson | <i>SMART Scholarship -Ethan Bryan</i> | DOD thru ASEE | 7440 |
| David Gullatt | <i>Louisiana Center for the Blind</i> | La. Center for the Blind | 400,000 |
| Les Guice | <i>LaTech Proposal for the Cybersecurity Research Program at the Cyber-</i> | AFOSR | 1,189,458 |
| Glenn Beer | <i>LIGO SEC Academic Year Follow-up</i> | USDE/LaSIP | 5,011 |
| Glenn Beer | <i>Louisiana Tech On-Line Professional Development Projects</i> | USDE/BoR | 70,000 |
| Niel Crews | <i>LaSPACE LURA: Haywood (Preventing the Degradation of PCR Rea-</i> | NASA thru LaSPACE | 6,000 |
| Weizhong Dai | <i>GSRA - Moxley: High-Order Accurate Finite Difference Time Domain</i> | NASA thru LaSPACE | 5,000 |

PROPOSALS SUBMITTED

| FILE # | PI | Co-PI 's | TITLE | AGENCY | \$ Requested |
|--------|--------------------|-------------------|---|----------------------------|--------------|
| 10-334 | Feng, June | | Early Detection of AD in Transgenic Mice Model Using Carbonylation Electrophoretic Profiles Obtained from a 2D Microfluidic Chip | NIH | 275,000 |
| 10-335 | Ker, Jun-Ing | | Cost-Effectiveness Analysis for Pharmacy Department | LSUHSCS | 1,000 |
| 10-336 | Crews, Niel | Guilbeau, Eric | Feasibility of Microflow Calorimetry for Identifying Amplified Bacterial Dna | NIH | 129,214 |
| 10-337 | Gullatt, David | Schillinger, Don | Value-Added Teacher Preparation Action Research Study Subgrant | BoR | 35,000 |
| 10-338 | Dua, Sumeet | | Center of Excellence in Assured Cloud Computing (CAC ²) | AFOSR | 6,000,000 |
| 10-339 | Pope, Janet | Hunt, Alice | The Effect of the Healthy Hops Curriculum on Nutrition/Health Knowledge, Fruit, Vegetable and Low-Fat Milk Consumption in Head Start Preschoolers in Rural Northern Louisiana | ADAF | 34,506 |
| 10-340 | Guice, Les | | CenturyLink Telecom Program & Professorship | La. Dept. of Economic Dev. | 900,000 |
| 10-341 | Wick, Collin | | CAREER: Computational Studies of Ion and Acid-Base Dissociation Reaction at Aqueous Interfaces | NSF | 534,789 |
| 10-342 | Wick, Collin | | Collaborative Research: Atmospheric Trace Gases Interactions With Water Thin Films: Molecular Simulations and Experimental Work | NSF | 153,622 |
| 10-343 | Allouche, Erez | Alam, Shaurav | Testing of the Bulldog Restraint System Under Biaxial Loading Condition | S&B Technical Products | 12,200 |
| 10-344 | Ramachandran, Ramu | Lvov/ Gunasekaran | Acquisition of a Raman Spectrometer-Microscope for Enhancing the Infrastructure for Advanced Chemistry and Nanotechnology Research and Education | NSF | 467,080 |
| 10-345 | Bell, Edward | Ryles, Ruby | Combined Personnel Preparation: Low Incidence Disabilities | U.S Dept. of Education | 295,667 |
| 10-346 | Allouche, Erez | | ASTM Scholarship: E. Ivan Diaz-Loya | ASTM International | 7,500 |
| 10-347 | Hou, Songming | Hou, Songming | Shape Reconstruction & Classification Using the Response Matrix | NSF | 463,320 |
| 10-348 | Crews, Niel | | Service Lifetime Enhancement of One-Step Microfluidic Prep/PCR/Analysis Instrumentation | NASA | 199,436 |
| 10-349 | Dai, Weizhong | | GSRA - Moxley: High-Order Accurate Finite Difference Time Domain Method for Solving Schroedinger Equation | LaSPACE | 5,000 |
| 10-350 | Guice, Les | | Louis Back-Up Server | LSU | 7,344 |
| 10-351 | Beer, Glenn | McCoy, B. | EPAS On-Line Professional Development Course 2010 | BoR | 21,000 |

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

| FILE # | PI | Co-PI 's | TITLE | AGENCY | \$ |
|--------|-------------------|---------------------|---|---|-----------|
| 11-001 | Simmons, Richard | Rea, Kenneth | ULS Serve-Learn Conference | ULS | 3,023 |
| 11-002 | Zivanovic, Sandra | | Solar Cells and Photodetectors Based on Nano-engineered Active Plasmonics Composites | LaSPACE | 6,000 |
| 11-003 | Eklund, Sven | | L.Coon/M.Jeansonne - Electrodeposition of Refractory Metals from Room Temperature Ionic Liquids | LaSPACE/LURA | 12,000 |
| 11-004 | Palmer, James | Strimbu/Lvov | Total Life Cycle Biomass Energy Research at Louisiana Tech University | DOE | 5,157,158 |
| 11-005 | Chiu, Alan | | CAREER: Real-Time Decoding Approach to Control Prosthetic Grasping Actions | NSF | 447,991 |
| 11-006 | Weiss, Leland | | CAREER: Ambient Thermal Energy Harvesting for Power Generation | NSF | 401,386 |
| 11-007 | Genov, Dentcho | | CAREER: Computational Design of Artificial Electromagnetic Materials and Active Plasmonics | NSF | 400,066 |
| 11-008 | Crews, Niel | | GSRA: James Haywood | LaSPACE/GSRA | 5,000 |
| 11-009 | Liu, Don | | CAREER: An Efficient Model of Disperse Flows at Low to Moderate Reynolds Numbers | NSF | 421,048 |
| 11-010 | Saber, Aziz | Wang, Jay | Improving the Bridge Scour Detection Method | LTRC | 400,000 |
| 11-011 | Saber, Aziz | | RPAID T-DECK | LTRC | 400,000 |
| 11-012 | Jaganathan, Arun | Saber, Aziz | Sensors for Bridge Deck Monitoring | LTRC | 400,000 |
| 11-013 | Tims, Heath | Turner, Galen | NASA Threads: Mathematics | NASA | 397,474 |
| 11-014 | Wang, Shengnian | | CAREER: Nanoengineering Cell Electroporation to Facilitate Pluripotent Stem Cell Research | NSF | 410,389 |
| 11-015 | Feng, June | | CAREER: Subproteome Purification Using Functional Polymer-Based Microfluidics | NSF | 467,815 |
| 11-016 | Evans, Katie | | Modeling in a Control Design Framework for Agile Micro Aerial Vehicles | AFOSR | 187,167 |
| 11-017 | Beer, Glenn | | LIGO SEC Academic Year Follow-up | BoR/NSF | 4,985 |
| 11-018 | Beer, Glenn | | Louisiana Tech On-Line Professional Development Projects | BoR/US Dept. of Education | 70,000 |
| 11-019 | Beer, Glenn | Schillinger/Kennedy | Project MICE | NSF | 1,373,688 |
| 11-020 | Wyatt, Kathy | | Business to Barn (B2B) Energy Initiative | USDA Rural Business Cooperative Service | 60,000 |
| 11-021 | Dai, Weizhong | | Development of a Higher Order Accurate Finite Difference Time Domain Method for Solving Schroedinger Equation | LaSPACE | 11,504 |

(Cont'd on page 5)

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

| FILE # | PI | Co-PI 's | TITLE | AGENCY | \$ |
|--------|-----------------------|----------------------|---|--------------------------------------|------------|
| 11-022 | Smith, Rebecca | | Teacher Collaboration for Inclusive Settings | BoR | 150,000 |
| 11-023 | Nelson, J. | | SMART Scholarship -Ethan Bryan | ASEE | 7,440 |
| 11-024 | Beer, Glenn | | Activity Station Support | LaSPACE | 9,807 |
| 11-025 | Allouche, Erez | | Fly Ash Processing Trial - Metro Vancouver's Waste-to-Energy Facility - Phase 2 | Precix Advanced Cutting Technologies | 59,414 |
| 11-026 | Strimbu, Bogdan | Holly/Gibson | Forest Resources Inventory Laboratory Enhancement | Weyerhaeuser Company Foundation | 59,475 |
| 11-027 | Nelson, James | Turner/ Carpenter | An Integrated Engineering STEP Center | NSF | 10,000,000 |
| 11-028 | Wiggins, Carynn | | Destination Singapore Math | LaTech | 5,900 |
| 11-029 | Casas, Irene | | A Geocomputation Approach to Understand the Role of Spatial Elements on Defense Preparedness Strategies in Extreme Events | NSF | 45,136 |
| 11-030 | Genov, Dentcho | Genov, Dentcho | Inhomogeneous Metal-dielectric Composite Materials for Solar Cell Applications | DOEnergy | 750,000 |
| 11-031 | Green, William | Normand, Justin | Comparison Study of Tocopherol Supplementation in Horses | Stuart Products | 3,219 |
| 11-032 | Weiss, Leland | | Small Scale Solar Thermal Harvesting with Advanced Materials and Storage | DOEnergy | 0 |
| 11-033 | Wick, Collin | | Computational Investigation on the Role of Interfaces on Ion and Molecular Transport, Reactivity, and Structure | DOEnergy | 0 |
| 11-034 | Bell, Edward | | Rehabilitation Research & Training Center on Blindness | DoEducation | 4,232,005 |
| 11-035 | Robbins, K. | | The Aquila Theatre Company Production | SouthARTS | 2,500 |
| 11-036 | Shoemaker, S. | | The Measurement of Auditory Interhemispheric Transfer Time in Children | NSF | 665,572 |
| 11-037 | Weiss, Leland | O'Neal C./Hall | Self-sustaining Surface Oil Spill Containment | DOEnergy | 0 |
| 11-038 | Null, Randall | O'Neal C./ Wilson | AMCOM Express Technical Domain | Radiance Technologies | 9,246,714 |
| 11-039 | Wasiuddin, Nazimuddin | | Evaluation of Dynamic Shear Rheometer Tests for Emulsions | LTRC | 100,000 |
| 11-040 | Lvov, Yuri | DeCoster/ Mills | Micro/Nano Containers for Sustained Protective Coating & Self-Healing | NSF-MIRT | 0 |
| 11-041 | Jones, Steven | | REU: Undergraduate Experiences in Micro/Nanoengineering | NSF | 327,906 |
| 11-042 | Derosa, Pedro | | LaSPACE: GSRA/Steven Baker | LaSPACE | 5,000 |
| 11-043 | McDaniel, Janelle | McDaniel, Janelle | Chronic Intermittent Ethanol Exposure and Tolerance Development in Female Adolescent Rats | ABMRF | 100,000 |
| 11-044 | Tyree, Mike | Dillaway, Dylan | Net Ecosystem C Exchange and Leaf Physiology in Short-Rotation Woody Crops Planted on a Latitudinal Transect Along the Mississippi Valley | AFRI | 249,781 |
| 11-045 | Cardenas, Henry | Cardenas, Henry | Electrokinetic Abrasion Resistance Enhancement in Concrete | A.J. Weller Corp | 3,445 |

NEW GRANTS AWARDED (CONTINUED FROM PG. 2)

| | | | |
|---------------------------|--|---------------------|--------------------|
| Chester Wilson | <i>Sweeney GSRA: Field-Portable, Nanowire-Enhanced Plasma Spectroscopic Sensor Platform</i> | NASA thru LaSPACE | 5,000 |
| Gullatt/Schillenger | <i>Value-Added Teacher Preparation Action Research Study Subgrant</i> | BoR | 35,000 |
| Mary Murimi | <i>Menu Modification for Lincoln Parish Child Nutrition Program</i> | USDA | 30,000 |
| Dylan Dillaway | <i>Seasonal Effects of Prescribed Burning on Longleaf Pine (Pinus palustris Mill.) Vigor and Mechanisms for Tolerating Repeated Crown Scorch</i> | USDA Forest Service | 31,723 |
| Green/Normand | <i>Comparison Study of Tocopherol Supplementation in Horses</i> | Stuart Products | 3,219 |
| O'Neal P./Shipp | <i>LaTech RAPD Senior Design Program</i> | NSF | 124,990 |
| Patrick Hindmarsh | <i>Environmental Effects on Bacillus Firmus Growth</i> | Syngenta | 5,000 |
| August 2010 | | | 404,441.27 |
| YTD 2010-11 Total: | | | \$7,530,304 |

ADDITIONAL GRANT FUNDING FOR EXISTING AWARDS

- L. Que, CAREER: BIOMOLECULAR NANOPHOTONIC FABRY-PEROT INTERFEROMETRY, NSF \$80,000;
- Gold/Sterling/Varahramyan, SUPERIOR GRADUATE FELLOWS IN ENGINEERING, BoR \$48,000;
- Y. Lvov/Varahramyan, A CENTER FOR ADVANCED MATERIALS AND NANOTECHNOLOGY IN AMRI AT THE UNIVERSITY OF NEW ORLEANS, BoR thru UNO \$110,000;
- T. Dobbins, CAREER: ENHANCING ATOMIC MOBILITY AND DESORPTION KINETICS IN METAL HYDRIDES, NSF \$89,929;
- Gold/Ramachandran, SUPERIOR GRADUATE FELLOWS IN ENGINEERING, BoR \$24,000;
- Gullatt/Parker, REGIONAL TURNAROUND SPECIALIST PROGRAM, BoR \$9,000;
- Y. Lvov, CLAY NANOTUBES FOR CONTROLLED RELEASE OF CORROSION INHIBITORS, BoR \$64,000;
- Allouche/Simicevic/Grimm, SENSORY SYSTEM FOR CRITICAL INFRASTRUCTURE: DEFECT, RECOGNITION, VISUALIZATION, AND FAILURE PREDICTION, BoR \$50,000;
- S. Sit, EFFECT OF MATERIAL SURFACE PROPERTIES ON ENDOTHELIAL CELL MICROMECHANICS, BoR \$45,609;
- C. Wick, COMPUTATIONAL MODELING AND DESIGN OF POLYMER ELECTROLYTES FOR LITHIUM ION BATTERIES, BoR \$39,142;
- D. Davis, ELECTRODEPOSITION OF MULTILAYERED MAGNETIC AND THERMOELECTRIC NANOTUBES, BoR \$38,093;
- S. Hou, A HYBRID METHOD FOR SOLVING INVERSE MEDIUM AND OBSTACLE PROBLEMS WITH LIMITED OR SYNTHETIC APERTURE, BoR \$38,798;
- V. Kaajakari, QUARTZ-MEMS FOR HIGH PERFORMANCE RF DEVICES, BoR \$37,722;
- J. Fang, HIGH SENSITIVITY PROSTATE CANCER DETECTION SYSTEM, ULM \$2,000;
- L. Sawyer, RESEARCH IN HIGH ENERGY PHYSICS AT LOUISIANA TECH UNIVERSITY, Dept. of Energy \$277,000

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To find \$\$ for your research, go to: http://research.latech.edu/resources/funding_opportunities (copy & paste link) or contact Beth Free, Pre-award Coordinator, 257-5075 or bfree@latech.edu.