

Louisiana Tech University



# BREEZE BULLETIN

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

*Do not let what you cannot do interfere with what you can do.*

*John Wooden  
(1910-, American basketball coach)*

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## NEW NSF REQUIREMENTS

Effective January 18, 2011, NSF has implemented new requirements for proposal submissions including:

- Data Management Program
- Post-doctoral Mentoring Program
- Primary Place of Performance (9 digit zip code)

Download the 2011 NSF proposal guide at this link (copy and paste into browser):

[http://research.latech.edu/files/documents/nsf\\_2011\\_grant\\_proposal\\_guide.pdf](http://research.latech.edu/files/documents/nsf_2011_grant_proposal_guide.pdf)

## TECH CLOSURE

**Mardi Gras**



**March 7 & 8**

## SSTI FEDERAL BUDGET SPECIAL ISSUE

Wednesday, February 16, 2011

Volume 16, Issue 7

### Budget Overview

President Barack Obama's FY12 budget request includes fewer ambitious proposals related to TBED than his previous budgets, but his new request offers increases for many R&D programs and several new efforts to promote high-tech development at the regional level. The proposed budget eschews most of the savings measures proposed by the National Commission on Fiscal Responsibility and Reform last November (see the November 17, 2010 issue of the Digest), which would have eliminated several agencies and reduced research funding. Instead, the Administration has proposed increases for research, particularly clean energy and renewable fuels research, and focused on reorganizing existing programs to achieve savings through efficiencies.

### \*\*\* A Note on Comparisons \*\*\*

Since the federal government is currently operating under a continuing resolution and no budget has been enacted for FY11, this year's Federal Budget Special Issue will not compare funding levels to the previous year's enacted budget. Instead, FY10 actual funding will be used as the basis for these comparisons. Where FY10 actual levels are unavailable, we have used FY10 enacted levels. All comparisons should be assumed to be from FY10 actual funding, unless noted otherwise. While we are aware that this will likely lead to some confusion, our decision is based on the use of FY10 actual levels in the White House budget request, available at the Office of Management and Budget website.

### Highlights

Among the items of interest to the TBED community:

- Federal science agencies, including the National Science Foundation (NSF), the Department of Energy (DOE) Office of Science, and the National Institute of Standards and Technology (NIST), stay on track to double their budgets.
- All of DOE's Office of Science programs would receive increases, with the exception of **Fusion Energy Sciences**. Funding for **Basic Energy Science** would grow by 22.1 percent over FY10 actual levels.
- The **National Institutes of Health (NIH)** would receive \$32 billion, a 3.4 percent increase over FY10 actual levels.
- Funding for the Department of Health and Human Service's (HHS) **Biomedical Advanced Research and Development Authority** would nearly double over FY10 actual levels to \$665 million. A \$100 million public-private venture capital fund for companies developing medical countermeasures is also proposed.

## NEW GRANTS AWARDED

PI/Co-PI	Title	Funding Agency	\$ Award-
Sumeet Dua	<i>Modes of Adaptation, Resistance, and Survival for Life Inhabiting a Freeze-dried-radiation-bathed Environment (MARSLIFE)</i>	NASA thru BoR	60,618
June Feng	<i>Microfluidic Chip Based Enrichment of Nitrosylated Protein and Preteoscalable Nanomanufacturing of Nanowire From Integrating Flow-guided Assembly and Synthesis</i>	NIH thru LBRN	18,268
Bogdan Strimbu		Weyerhaeuser	50,000
<b>December 2010</b>			<b>574,560</b>
Tyree/Patterson	<i>The Influence of Establishing Native Short-rotation Woody Crops on Car-</i>	USDA	88,255
Ramachandran, et al	<i>Removal of Trace Amounts of Water From Non-trans-fat Oils at High</i>	Frymaster	50,000
Patrick Hindmarsh	<i>Environmental Effects on Bacillus Firmus Spore Growth</i>	Syngenta	5,000
Ed Bell	<i>Orientation and Mobility Training</i>	Lincoln Parish School Board	10,000
Niel Crews	<i>Development of a Bioanalytical Nanosatellite</i>	BoR	30,231
McCollum/Murimi/Colvin	<i>Development of a Parents' Academy for Lincoln Parish Schools and Pa- rental Health &amp; Educational Support</i>	Lincoln Health Founda- tion	53,643
<b>January 2011</b>			<b>237,129</b>
McFadden/Sims/ Books	<i>Sexual Health: Raising STI Awareness</i>	Lincoln Health Founda- tion	1,064
Dixie Griffin	<i>Senior Design Project</i>	LTRC	5,000
Merchant/Smith	<i>Green Clinic Consortium</i>	Louisiana Workforce Commission	124,109
Troy Malmstrom	<i>Bayou Dechene Lake Site Model</i>	Denmon Engineering	5,000
<b>February 2011</b>			<b>135,173</b>
<b>FY 2010-2011 YTD</b>			<b>12,999,359</b>

## NEW FEDERAL RFP'S ON GRANTS.GOV

- NASA , National Aeronautics and Space Administration, NASA Headquarters, Education Opportunities in NASA STEM (EONS) Grant (copy & paste links into browser): <http://www07.grants.gov/search/search.do?&mode=VIEW&oppld=74773>;
- HHS, Department of Health and Human Services, National Institutes of Health, Phase IIB Grants for Brain and Behavior Tools (R44) Grant: <http://www07.grants.gov/search/search.do?&mode=VIEW&oppld=74793>;
- DOL, Department of Labor, Employment and Training Administration, Career Pathways Innovation Fund Grant: <http://www07.grants.gov/search/search.do?&mode=VIEW&oppld=74813>;
- EPA, Environmental Protection Agency, Environmental Impact And Mitigation Of Oil Spills, Modification 1: <http://www07.grants.gov/search/search.do?&mode=VIEW&oppld=75253>;
- SBA, Small Business Administration, Office of International Trade - Small Business Jobs Act of 2010, Grant: <http://www07.grants.gov/search/search.do?&mode=VIEW&oppld=75293>;
- DOI, Department of the Interior, National Park Service, National Park Service- Southeast Coast Network Database Program Grant: <http://www07.grants.gov/search/search.do?&mode=VIEW&oppld=75353>.
- DOE, Department of Energy, Idaho Field Office, Nuclear Energy University Programs - Reactor Upgrades Grant: <http://www07.grants.gov/search/search.do?&mode=VIEW&oppld=75413>;
- DOD, Department of Defense, Defense Threat Reduction Agency, FY2011 - 2016 Basic Research for Combating Weapons of Mass Destruction (C-WMD) Broad Agency Announcement (BAA) Grant: <http://www07.grants.gov/search/search.do?&mode=VIEW&oppld=75633>;

## PROPOSALS SUBMITTED

FILE #	PI	Co-PI 's	TITLE	AGENCY	\$ Requested
11-164	Paun, Andrei	DeCoster, Mark	SHF: SMALL Computing with Cells-the Neuron Case	NSF	250,000
11-165	Paun, Andrei		ALG: SMALL: Cover Automata: A Smaller Deterministic Automaton	NSF	426,263
11-166	Feng, June		Microfluidic Chip Based Enrichment of Nitrosylated Protein and Preteomic Microchip Coupled with MALDI-TOF-MS	LBRN	18,268
11-167	Tyree, Mike	Patterson, William	The Influence of Establishing Native Short-rotation Woody Crops on Carbon Cycling Planted on Retired Agricultural Lands of the Lower Mississippi Alluvial Valley	USDA	135,103
11-168	Liu, Don		Collaborative Research: An Efficient Computational Approach for Wave and Surge Attenuation in Wetlands and Applications in Flood Risk Reduction	NSF	159,245
11-169	Ramachandran, Bala	Palmer/Hall/Eklund/Wick/Lvov	Removal of Trace Amounts of Water From Non-trans-fat Oils at High Temperature	Frymaster	49,570
11-170	Wang, Jay		Application of Soil Bioengineering (Ecosystem-based) Approaches for Riparian Restoration in Coastal Area of Louisiana	OCRP	75,000
11-171	Kim, Yeonsoo		Effect of Nutrition Education on Maternal Health & Pregnancy Outcomes in Pregnant Women in a Low Income Rural Community	Allen Foundation	52,661
11-172	Kennedy, Gary	Palmer/Yule	Landowner Willingness to Participate in a Cost Share Program to Decommission Defunct Water Wells in North Louisiana's Sparta Aquifer Region	USEPA	14,895
11-173	Weiss, Leland	Tims, Heath	Eco Friendly Materials for Automotive Application and Sustainability	EPA	15,000
11-174	Guilbeau, Eric		Mentoring Biomedical Research at Louisiana Tech University	NIH	0
11-175	Sawyer, Lee	Greenwood/Wobisch	Research in High Energy Physics: 2011-2014 Request for Renewal	DOEnergy	862,221
11-176	O'Neal, Patrick		Quality Control in Nano-medicine Towards an Integrated System for Early Cancer Detection and Therapeutics	LBRN	125,000
11-177	Giorno, Rebecca		Roles of the Spore Coat and Exosporium in Modulating a Response to Germinants	LBRN	425,695
11-178	Eklund, Sven		Electrochemical and Florescence-based Multianalyte Microphysiometer for Real-Time Measurement of Cell Metabolism, Metabolic Profiling and Drug Screening	LBRN	125,000
11-179	Carpenter, Jenna		Catalyzing a National Network of Grand Challenge Scholars Programs to Transform Undergraduate STEM Education	NSF	5,000,000
11-180	Bell, Edward		Orientation and Mobility Training	Lincoln Parish School Board	10,000
11-181	Hindmarsh, Patrick		Environmental Effects on Bacillus Firmus Spore Growth	Syngenta	5,000

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

FILE #	PI	Co-PI 's	TITLE	AGENCY	\$
11-182	Carwile, Guy		HABS Drawings - Municipal Memorial Auditorium	La. Office of Culture, Tourism, Historic Preservation	5,265
11-183	Allouche, Erez		Evaluating the Geopolymerization Potential & Commercial Applications of Dollet Hill Power Plant Fly Ash Phase 4	Cleco Power	40,000
11-184	Allouche, Erez		Polyurea Spray Development: Full-Scale Laboratory and Field Testing at the Trenchless Technology Center	3M	62,775
11-185	Gourd, Jean		Abscond: Agent-Based Extraction of Social Context from Network Data	DARPA	60,000
11-186	Saber, Aziz		New Technology for Repair and Rehabilitation of Structures	NOAA	93,736
11-187	Griffin, D.M.		Senior Design Project	LTRC	5,000
11-188	Davis, Despina	Liu, Don	Magnetic Sensors for Rapid Assessment of Nanoparticle-Cell Interactions	NASA/EPSCoR	505,083
11-189	Hegab, Hisham	Weiss./ O'Neal C.	Collaborative Research: Novel Nanostructured Thermoelectric Generators for Energy Harvesting	NSF	349,871
11-190	Wilson, Chester		Energy Harvesting From the Human Gait	DOD	356,919
11-191	Chiu, Alan		Adaptive Coupled Neural System Model fo Hippocampal Function Restoration	INBRE/LSU	111,433
11-192	Wang, Jay		Bioengineered Stabilization of Degraded Wetlands and Levee Systems Using Vegetation for Resilient Coastal Louisiana	La. Sea Grant Program	175,417
11-193	Malmstrom, Troy		Bayou Dechene Lake Site Model	Caldwell Parish Industrial Dev.	5,000
11-194	Que, Long	Lvov, Yuri	Lab-on-Chip-For-Controlled Drug Effects Analysis	NSF	340,464
11-195	Que, Long		Nanocomposite-Microwire Microbiosensors (N-MW ubiosensors)	NSF	304,940
11-196	Napper, Stan	Dua, Sumeet	LBRN Mentor - LaTech	LBRN/INBRE	103,902
11-197	Napper, Stan	Dua, Sumeet	LBRN Admin - LaTech	LBRN/INBRE	46,896
11-198	Feng, June		Understanding the Molecular Mechanism of Alzheimer's Disease: Quantitative Proteomics of Oxidatively Modified Proteins using iTRAQ Analysis ...	LBRN/INBRE	112,500
11-199	Choi, Ben		Human and Humanoid Robot Interactions	NSF	245,758
11-200	Allouche, Erez	Patil, Kunal	Effect of De-icing Slat Spray Residue on the Corrosion Potential of WWR	LEC Steel	12,000
11-201	Davis, Despina	Genov, Dentcho	Electrodeposition of Macroscopic Multi-layered Cu/Ag Nanowire Array Metamaterials	NSF	334,134
11-202	Sethi, Prerna		Rule-based Data Mining for Knowledge Discovery in Alzheimer's Disease Using Microarray Databases	LBRN/INBRE	112,500

(Cont'd on page 5)

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

FILE #	PI	Co-PI 's	TITLE	AGENCY	\$
11-203	Bryan, Melinda		Asymmetric Directional Microphone Fittings for Individuals With an Asymmetric Hearing Loss	Seimens Hearing Instruments	983
11-204	Giorno, Rebecca		Roles of the Bacillus Anthracis Spore Coat and Exosporium in Modulating a Response to Germinants	LBRN/INBRE	22,589
11-205	Bryan, Melinda		Comparison between ANL and QuickSIN Measure	Unitron Hearing	20,422
11-206	Wang, Shengnian		Scalable Nanomanufacturing of Nanowire From Integrating Flow-guided Assembly and Synthesis	NSF	299,379
11-207	DeCoster, Mark	Dai/Khalig	Volume and Shape Dynamics in Spheroids from Normal and Brain Tumor-Glia	NSF	649,123
11-208	Gullatt, David		WALL 10/11/23 Turnaround School Travel	BoR	7,000

## SSTI FEDERAL BUDGET SPECIAL ISSUE (CONT'D FROM PAGE 1 . . .)

The Research and Experimentation (R&E) tax credit would be expanded by 20 percent and would be made permanent.

### Manufacturing

- Several federal manufacturing initiatives would receive increases or initial funding:
- Funding for the **Hollings Manufacturing Extension Partnership (MEP)** would grow 14.1 percent over FY10 actual levels to \$142.6 million.
- NIST's new **Advanced Manufacturing Technology Consortia** program, a public-private partnership to coordinate and fund industrial research, would receive \$12 million.
- A new **Workforce Innovation Fund**, a collaborative effort from the Departments of Labor (DOL) and Education (ED) would receive \$380 million to award competitive grants for innovative workforce reform initiatives.
- A total of \$190.4 million (156.6 percent increase over FY10 actual) would be provided for **NSF's Advanced Manufacturing** initiative, which supports a diverse research portfolio generating basic research discoveries that benefit advanced manufacturing.

### Entrepreneurship, Clusters and Regional Innovation

Startup America, the national competitiveness initiative announced in January, would receive support through new initiatives at the Small Business Administration (SBA), the Department of Commerce (DOC), DOE, and Treasury. Though the Administration has positioned the effort as a public-private partnership, drawing support from high-tech corporations, the FY12 budget includes funding for the effort's capital access, community innovation and mentoring initiatives. Programs associated with Startup America in the FY12 request include:

SBA would provide \$2 billion over five years through two new funds that would operate through the Small Business Investment Company (SBIC):

- The **Innovation Fund** would provide \$200 million in guaranteed debentures in FY12 and annually for the next four years. The fund would offer matching funds to investors who work with companies trying to survive the gap between angel and later-stage financing.
- The **SBIC Impact Fund**, also proposed at \$200 million for FY12 and each of the next four years, would support investors who invest in high-potential businesses in underserved markets.
- The budget would expand the Department of the Treasury's **New Market Tax Credits (NMTC)** program, which helps attract private sources of capital to underserved regions, from \$3 billion to \$5 billion.
- Smaller programs like the EDA's **i6 Green** and a mentoring pilot program from SBA, DOE and ARPE-E would receive support.
- The U.S. Patent and Trademark Office (USPTO) would introduce a three-tiered system of patent examinations that would permit applicants to receive an accelerated approval process for a fee.

**SSTI FEDERAL BUDGET SPECIAL ISSUE (CONT'D FROM PAGE 5. . .)**

- \$526 million for the International Trade Administration's **National Export Initiative** to help achieve the goal the President set in the State of the Union address of doubling exports by 2014;
- \$40 million for EDA's new **Regional Innovation Program** to support cluster development and to promote innovation in distressed portions of the country;
- \$12 million for SBA's **Regional Innovation Clusters** program and \$3 million for the Emerging Leaders initiative; and,
- Funding for the Department of Agriculture's (USDA) **Regional Innovation Initiative (RII)**, which would assist rural communities in designing regional economic strategies, through a surtax on other USDA programs.

**Clean Energy**

Several agencies and programs that focus on clean energy technologies receive increase funding in the President's budget. In the State of the Union address, President Obama set the goal of producing 80 percent of the country's electricity from clean energy sources by 2035. The FY12 budget would:

- Boost funding for DOE's **Office of Energy Efficiency and Renewable Energy (EERE)** to \$3.2 billion, a 44.3 percent increase over FY10 actual levels;
- Within EERE, double funding for **Vehicle Technology** research over FY10 actual levels;
- Provide \$550 million for **Advanced Research Projects Agency-Energy (ARPA-E)**, which would focus on clean energy projects;
- Expand funding for the USDA **Agriculture and Food Research Initiative**, which funds research on biofuels and renewable energy, to \$325 million;
- Increase funding for USDA's **Bioenergy for Advanced Biofuels Program** by 90.1 percent to \$105 million;
- Double funding for DOL's **Green Jobs Innovation Fund**;
- Eliminate tax breaks for non-renewable energy companies, a move the Administration estimates would generate \$46 billion over 10 years for renewable energy and fuels programs; and,
- Add three new DOE Energy Innovation Hubs, bringing the total to six.

**STEM Education**

Education receives a large boost in the proposed budget, mostly due to increased funding for the federal Pell Grant program, but also through several STEM-oriented initiatives. A new \$206 million effective teaching and learning for K-12 STEM program would replace and expand the **Mathematics and Science Partnerships Program** at ED, along with \$300 million for **ED's Investing in Innovation (i3)** program. The i3 program would be instructed to prioritize STEM projects. NSF would administer a \$20 million science and technology workforce program that would be used to attract undergraduates from underrepresented groups to STEM fields. DOE's **Workforce Development Program for Teachers and Scientists** would receive \$36.5 million (9 percent increase) to promote STEM and energy education.

**Broadband and Wireless Infrastructure**

As part of the Administration's focus on national infrastructure improvements, the budget proposes legislation to allow spectrum license auctions that could generate more than \$28 billion over the next 10 years. These voluntary incentive auctions, proposed in the Federal Communications Commission's (FCC) National Broadband Plan, would help reallocate some of the licensed spectrum from the television broadcasting sector to the wireless data industry. FCC proceeds would contribute to the **Wireless Innovation (WIN) Fund**, a government-wide initiative that would receive \$3 billion under the proposed budget. President Obama has set the goal of extending 4G wireless to 98 percent of Americans within five years. The WIN Fund would support basic research, experimentation and testbeds, and applied development in FY12 through programs at the NSF, ARPA-E, DARPA and several agencies within the Department of Commerce.

A detailed write-up in a special pdf report on the FY11 budget proposal can be downloaded here: <http://www.ssti.org/Digest/2011/fy12budget.pdf>. Agencies included in the report are:

**Budget Overview**

Department of Agriculture  
 Department of Commerce  
 Department of Defense  
 Department of Education



## **ADDITIONAL GRANT FUNDING FOR EXISTING AWARDS**

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- C. Talton, BEACON MATH PROJECT, U.S. Dept. of Education through LaSIP \$48,080;
- G. Beer, A COMPREHENSIVE SCHOOL REFORM INITIATIVE FOR LOUISIANA GEAR UP SCHOOLS-YEAR 3, U.S. Dept. of Education through LaGEARUP \$59,072;
- C. Talton, THE BEACON MATH PROJECT BESE, BESE through LaSIP \$33,656;
- G. Beer, A COMPREHENSIVE SCHOOL REFORM INITIATIVE FOR LOUISIANA GEAR UP SCHOOLS-YEAR 2, U.S. Dept. of Education (NCLB) through LaSIP \$59,073;
- M. O'Neal, PROVIDING MANAGERIAL EXPERTISE TO NETWORK FOUNDATION TECHNOLOGIES, Network Foundation Technologies \$12,000;
- R. Sterling, REHABILITATION OF WASTEWATER COLLECTION AND WATER DISTRIBUTION SYSTEM, EPA through Batelle Memorial Institute \$49,013;
- V. Phoha, DISTRIBUTED AUTONOMY FOR INTELLIGENT MAKING, ADAPTIVE LEARNING, AND ROBUST COLLABORATION, ONR through Penn State \$19,600;
- R. Sterling, REHABILITATION OF WASTEWATER COLLECTION AND WATER DISTRIBUTION SYSTEM, EPA through Batelle Memorial Institute, \$8,377;
- J. Smith, COMMUNITY BASED JOB TRAINING GRANT, U.S. Dept. of Labor through Delta Community College \$8,538

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## **SSTI FEDERAL BUDGET SPECIAL ISSUE (CONT'D FROM PAGE 6 . . .)**

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Department of Energy

Department of Health and Human Services

Department of Homeland Security

Department of Housing and Urban Development

Department of the Interior

Department of Justice

Department of Labor

Department of Transportation

Department of the Treasury

Environmental Protection Agency

NASA

National Science Foundation

Regional Commissions and Authorities

Small Business Administration

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