RESEARCH ACTIVITY

Grantsmanship

The following is a summary of projects active during all or part of calendar year 2012.

Title: Alstom-Grid Integration
Sponsor: Alstom Power Inc.
Amount: $136,762
TTU Investigator(s): S. Bayne, V. Rao

Title: Documenting the Engineering-Relevant Aspects of Extreme Thunderstorm Winds
Sponsor: National Science Foundation
Amount: $114,606
TTU Investigator(s): J. Schroeder

Title: Fash Foundation Research Support
Sponsor: Fash Foundation
Amount: $5,000
TTU Investigator(s): J. Schroeder

Title: GRI for 21P161 Workshop: Windfarms Underperformance and the National Wind Resource Center
Sponsor: Various
Amount: $3,270
TTU Investigator(s): L. Castillo

Title: Castillo/ETF – Renewable Energy Initiative
Sponsor: Texas Emerging Technology Fund
Amount: $2,500,000
TTU Investigator(s): L. Castillo

Title: Understanding Stratification and Wake Evolution due to Thermal Fields for Wind-Turbine Array over a Rough-Terrain
Sponsor: National Science Foundation/University of Texas San Antonio
Amount: $12,686
TTU Investigator(s): L. Castillo

Title: Numerical Experiments and Observational Network Design for the Improvement of the Representation of the Urban Atmospheric Boundary Layer
Sponsor: National Institute of Meteorological Research
Amount: $100,000
TTU Investigator(s): S. L. Kang
Title: IPA Hazard Mitigation and Structural Engineering  
Sponsor: National Science Foundation  
Amount: $168,018  
TTU Investigator(s): K. Mehta

Title: GRDS SUPPLEMENT: MRI-Development of Real Time Simulator for Smart Grid Systems Integrated with Distributed Renewable Energy Sources  
Sponsor: National Science Foundation  
Amount: $41,000  
TTU Investigator(s): V. Rao

Title: REU SUPPLEMENT: MRI-Development of Real Time Simulator for Smart Grid Systems Integrated with Distributed Renewable Energy Sources  
Sponsor: National Science Foundation  
Amount: $6,000  
TTU Investigator(s): V. Rao

Title: Documentation of Hurricane Wind Fields – State Farm  
Sponsor: State Farm Insurance Companies  
Amount: $25,000  
TTU Investigator(s): J. Schroeder

Title: Documentation of Hurricane Wind Fields – RMS  
Sponsor: Risk Management Solutions  
Amount: $15,000  
TTU Investigator(s): J. Schroeder

Title: National Mesonet Pilot Project – West Texas Mesonet  
Sponsor: Earth Networks, Inc.  
Amount: $191,585  
TTU Investigator(s): J. Schroeder

Title: SUPPLEMENT: MRI RAPID: Acquisition of a Field Spectroposcopy Environmental Analysis System for Gulf Oil Spell Research  
Sponsor: National Science Foundation  
Amount: $1,999  
TTU Investigator(s): D. Liang

Title: SNL/TTU Experimental Wind Farm  
Sponsor: DOE/Sandia Labs  
Amount: $355,109  
TTU Investigator(s): J. Schroeder
Title: Sandia National Laboratory: Support on the Development of a Non-Intrusive Measurement System  
Sponsor: Sandia National Laboratories  
Amount: $25,000  
TTU Investigator(s): J. Schroeder

Title: Sandia National Laboratory: Building 350 Update  
Sponsor: DOE/Sandia National Laboratories  
Amount: $48,756  
TTU Investigator(s): J. Schroeder

Title: SUPPLEMENT: Building 350 Renovations: Amendment for Keypad Lock  
Sponsor: DOE/Sandia National Laboratories  
Amount: $2,168  
TTU Investigator(s): J. Schroeder

Title: Sandia National Laboratories: SWiFT Vehicle Support  
Sponsor: Sandia National Laboratories  
Amount: $17,305  
TTU Investigator(s): J. Schroeder

Title: Sandia National Laboratories: Support on the Development of a Non-Intrusive Measure  
Sponsor: Sandia National Laboratories  
Amount: $25,000  
TTU Investigator(s): J. Schroeder

Title: CAREER: Quantifying Inadvertent Weather Modification and Education through Museum Programs  
Sponsor: National Science Foundation  
Amount: $800,000  
TTU Investigator(s): B. Ancell

Title: Integration of Forecast Sensitivity into the NWS Forecasting Process to Improve Predictability of High-Impact Weather  
Sponsor: National Oceanic and Atmospheric Administration  
Amount: $51,944  
TTU Investigator(s): B. Ancell

Title: Testing of Alternative Support Materials for Portable Roll-Up Signs Used in Maintenance Work Zones  
Sponsor: Texas Department of Transportation  
Amount: $32,923  
TTU Investigator(s): S. W. Bae
<table>
<thead>
<tr>
<th>Title</th>
<th>Sponsor</th>
<th>Amount</th>
<th>TTU Investigator(s)</th>
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<tbody>
<tr>
<td>Technology Solution for Wind Integration</td>
<td>Center for Commercialization of Electric Technologies (TTU)</td>
<td>$150,472</td>
<td>S. Bayne</td>
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<tr>
<td>(NWI) Energy-Aware Aerial Systems for Persistent Sampling and Surveillance</td>
<td>AFOSR/University of Colorado</td>
<td>$223,026</td>
<td>C. Weiss</td>
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<td>An Exploratory Study for Retrofitting Tilt Towers for PTC Systems</td>
<td>Western Towers</td>
<td>$15,500</td>
<td>D. A. Smith, S. Morse, D. Zuo</td>
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<td>Investigation of Wind-Induced Vibration on a Tubular Guyed-V Transmission Structure</td>
<td>NV Energy</td>
<td>$183,327</td>
<td>D. A. Smith, S. Morse, D. Zuo</td>
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<td>Limited Management Services</td>
<td>National Storm Shelter Association</td>
<td>$76,474</td>
<td>E. Kiesling</td>
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<td>Task A-4: Alstom: Correlating Low-Level Atmospheric Wind Measurements with Wind Turbine Performance</td>
<td>Alstom Power, Inc.</td>
<td>$90,000</td>
<td>J. Schroeder, D. Zuo</td>
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<td>Development of Design Guidelines and Mitigation Strategies for Wind-Induced Traffic Sign Structure Vibrations</td>
<td>Texas department of Transportation</td>
<td>$70,890</td>
<td>D. Zuo</td>
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<td>Wind Tunnel Comparative Study</td>
<td>NSF/Colorado State University</td>
<td>$10,000</td>
<td>D. A. Smith, D. Zuo (50%)</td>
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<tr>
<td>Title</td>
<td>PIRE: USA/Europe Partnership for Integrated Research and Education in Wind Energy Intermittence: From Wind Farm Turbulence to Economic Management</td>
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<td>Sponsor</td>
<td>National Science Foundation/Johns Hopkins University</td>
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<td>Amount</td>
<td>$387,750 +</td>
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<td>J. Schroeder, A. Swift + 50%</td>
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<table>
<thead>
<tr>
<th>Title</th>
<th>Collaborative Research: Achieving Economic Effectiveness and High Capacity Factor in Wind Farms to Meet the 2030 Grand Challenge</th>
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<td>Amount</td>
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<td>TTU Investigator(s)</td>
<td>J. Schroeder (33%)</td>
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<th>Title</th>
<th>EAGER: Collaborative Research: Exploring the Structural Response to Wind Pressure through Wireless Sensor Networks</th>
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<tr>
<td>Sponsor</td>
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<td>Amount</td>
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<td>TTU Investigator(s)</td>
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<tr>
<th>Title</th>
<th>Collaborative Research: High-Resolution Observations of the Dryline Environment (HiRODE)</th>
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<tr>
<td>Sponsor</td>
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<td>Amount</td>
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<td>TTU Investigator(s)</td>
<td>C. Weiss</td>
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<tr>
<th>Title</th>
<th>Predicting Probabilistic Wind Load Effects for Performance-Based Design of Structures: Integration of Uncertainty and Directionality</th>
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<td>Sponsor</td>
<td>National Science Foundation</td>
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<td>Amount</td>
<td>$144,171 +</td>
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<td>TTU Investigator(s)</td>
<td>X. Chen (50%) +</td>
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<th>Title</th>
<th>TUES: Southwestern University Data Acquisition and Learning Lab</th>
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<tr>
<td>Sponsor</td>
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<td>Amount</td>
<td>$62,394</td>
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<td>J. Schroeder</td>
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<tr>
<th>Title</th>
<th>The Elderly’s Mental Health Service Utilization after a Disaster: An Agent-Based Approach</th>
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<tr>
<td>Sponsor</td>
<td>National Institutes of Health</td>
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<tr>
<td>Amount</td>
<td>$127,224.24 +</td>
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<tr>
<td>TTU Investigator(s)</td>
<td>D. Liang (33%) +</td>
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Title: Evaluation of a Helical Anchor Foundation for Use with Tilt-Up Positive Train Control Towers
Sponsor: National Science Foundation
Amount: $76,624
TTU Investigator(s): S. Morse, D. A. Smith, D. Zuo

Title: Web-Based Risk Management System for Assessing and Communication the Impact of Climate Change on Coastal Communities
Sponsor: National Oceanic and Atmospheric Administration
Amount: $150,000 +
TTU Investigator(s): D. Liang (50%) +

Title: Development of a Human Subject-Specific Simulation Model for Tornado Evacuation Planning
Sponsor: National Science Foundation
Amount: $92,120.50
TTU Investigator(s): D. Liang

Title: U.S. Offshore Wind: Advanced Technology Demonstration Projects 106404
Sponsor: DOE/Texas A&M University
Amount: $67,000
TTU Investigator(s): L. Castillo, S. Bayne, X. Chen, S. Ekwaro-Osire, S. Morse, D. Zuo (67%)

Title: The Wind Energy Scholar Program (WESP): Education, Mentoring and Guiding the Wind Energy Workforce of the 21st Century
Sponsor: National Science Foundation
Amount: $209,773
TTU Investigator(s): L. Castillo, S. Ekwaro-Osire, J. Schroeder (total 33%) +

TOTAL PROPOSALS SUBMITTED 2012 (ORS) – does not include all above

- Number of Proposals 2012 – 18.9
- Total Amount Requested: $3,691,981.21