

SOUTH DAKOTA BOARD OF REGENTS

Full Board

AGENDA ITEM: 12 – K

DATE: August 12, 2015

SUBJECT: Competitive Research Grant Update

The Competitive Research Grant Award program was established in collaboration with Governor Rounds in conjunction with his 2010 Research Initiative to strengthen South Dakota’s research competitiveness and to generate commercial activity derived from research. The primary goal of the program was to give university faculty an opportunity to start a sustainable research program and to help build research capacity in their department. During the first year of the program, a total of 53 proposals were received. To provide release time from teaching, funding was requested for the top 19 proposals to represent 25% of the faculty members’ nine month salary, plus one summer month (excluding all indirect costs). The funding was matched (25%) by the university to provide 50% release time and two summer months of salary to the awardees to do research. For FY07 and FY08 a similar approach was employed to award just under \$500,000 each year to approximately 20 faculty members throughout the Regental system.

For FY09, the Research Affairs Council recommended that a number of minor changes be applied to the annual Request for Proposals, most notably: 1) the total amount of the awards was increased to \$100,000 rather than aligning with 25% of a faculty member’s salary; 2) allow funds to be used for faculty salaries, post-doctoral assistants, startup packages, graduate students, and equipment in support of the particular research project; and 3) give emphasis to awardees who do not have a record of success with external funding agencies or who are just getting started in their research career. In FY11, two other modifications were made to the RFP to eliminate the 1:1 match required by the institution and focus applicant eligibility toward those within the first four years of full-time tenure track employment. Most recently for FY14 the pool of funds split the CRG awards into two different amounts (\$25,000 and \$100,000) to provide a larger number of faculty an opportunity to compete for funding under this program.

(Continued)

RECOMMENDED ACTION OF THE EXECUTIVE DIRECTOR

Information only.

FY16 Grant Proposals

The Request for Proposals (RFP) for the FY16 Competitive Research Grant Awards was posted on February 6, 2015, and a total of 30 proposals were submitted by researchers within the Regental system by the April 1 deadline. Each proposal was assigned three reviewers to evaluate and provide feedback on the proposals. Reviews were completed on May 15, and letters to both award recipients and non-recipients were mailed on May 26. Award winners for this year include:

Black Hills State University

- Dr. Katrina Jensen, Chemistry – “Development of Copper Photoredox Catalysts for the Synthesis of Anti-Microbial Compounds” (Grant Award: \$22,880)
- Dr. Justin Ramsey, Natural Sciences – “Characteristics of triploid ivies (F1 *Hedera helix* x *H. hibernica*) and potential for development as non-invasive horticultural varieties” (Grant Amount: \$24,803)

South Dakota School of Mines & Technology

- Dr. Christopher Shearer, Civil Engineering – “Performance of Fiber-Reinforced Shotcrete in Mining Applications” (Grant Award: \$98,056)

South Dakota State University

- Dr. Reinaldo Tonkoski, Electrical Engineering – “Development of Reliable and Sustainable Microgrids (Year 2 Continuation Proposal)” (Grant Award: \$96,200)
- Dr. Yunpeng Pan, Mathematics and Statistics – “A Decision Analytics Platform with Application to Sustainable Cloud Computing” (Grant Award: \$62,038)

University of South Dakota

- Dr. Hongli Sun, Biomedical Engineering – “Erythropoietin Immobilized Biodegradable Nanofibrous Scaffold for Bone Tissue Engineering” (Grant Award: \$100,000)
- Dr. Meghann Jarchow, Biology – “Prairies in Multifunctional Landscapes: Understanding the Effects of Disturbance and Plant Phenology (Year 2 Continuation Proposal)” (Grant Award: \$24,965)
- Dr. Jing Liu, Physics – “Development of a Segmented *p*-type Point-Contact High-Purity Germanium Detector for Rare-Event-Search Experiments” (Grant Award: \$25,000)

Since FY06 a total of 436 Competitive Research Grant proposals have been submitted with 107 awards totaling approximately \$4.96 million awarded over the past 11 years (see Table 1). Tables 2 and 3 provide institutional level grant proposal and award numbers since the program was developed, and a complete list of funding awards can be found in Attachment I.

Table 1
Total Submissions, Awards, and Funding Allocations for the Competitive Research Grant Award Program

<i>Fiscal Year</i>	<i>Total Submissions</i>	<i>Total Awards</i>	<i>Total Allocation</i>
2006	53	19	\$444,293
2007	35	20	\$441,760
2008	36	15	\$376,377
2009	31	6	\$499,450
2010	49	6	\$480,992
2011	35	7	\$528,351
2012	32	5	\$450,000
2013	52	6	\$438,375
2014	37	7	\$431,503
2015	46	8	\$432,232
2016	30	8	\$450,513
Total	436	107	\$4,973,846

Table 2
Total Competitive Research Grant Requests by Each Regental Institution

<i>Fiscal Year</i>	<i>BHSU</i>	<i>DSU</i>	<i>NSU</i>	<i>SDSM&T</i>	<i>SDSU</i>	<i>USD</i>	<i>System</i>
2006	5	4	1	8	22	13	53
2007	1	5	2	5	12	10	35
2008	0	5	2	11	12	6	36
2009	1	2	1	10	9	8	31
2010	2	0	2	7	22	16	49
2011	3	3	0	7	10	12	35
2012	0	2	2	3	14	11	32
2013	2	0	2	12	19	17	52
2014	0	1	2	16	9	9	37
2015	3	3	2	7	20	11	46
2016	3	1	0	12	8	6	30
Total	20	26	16	98	157	119	436

Table 3
Total Competitive Research Grant Allocations for Each Regental Institution

<i>Fiscal Year</i>	<i>BHSU</i>	<i>DSU</i>	<i>NSU</i>	<i>SDSM&T</i>	<i>SDSU</i>	<i>USD</i>	<i>System</i>
2006	\$15,600 ⁽¹⁾	**	**	\$107,611 ⁽⁵⁾	\$236,880 ⁽⁹⁾	\$84,202 ⁽⁴⁾	\$444,293 ⁽¹⁹⁾
2007	\$15,847 ⁽¹⁾	\$68,675 ⁽³⁾	\$15,925 ⁽¹⁾	\$119,703 ⁽⁵⁾	\$166,963 ⁽⁸⁾	\$54,647 ⁽²⁾	\$441,760 ⁽²⁰⁾
2008	**	\$71,628 ⁽³⁾	**	\$81,670 ⁽³⁾	\$208,054 ⁽⁸⁾	\$15,025 ⁽¹⁾	\$376,377 ⁽¹⁵⁾
2009	**	**	**	\$143,328 ⁽²⁾	\$183,668 ⁽²⁾	\$172,454 ⁽²⁾	\$499,450 ⁽⁶⁾
2010	**	**	\$37,710 ⁽¹⁾	\$82,463 ⁽¹⁾	\$160,819 ⁽²⁾	\$200,000 ⁽²⁾	\$480,992 ⁽⁶⁾
2011	\$123,509 ⁽²⁾	**	**	\$44,645 ⁽¹⁾	\$190,197 ⁽²⁾	\$170,000 ⁽²⁾	\$528,351 ⁽⁷⁾
2012	**	**	**	**	\$264,350 ⁽³⁾	\$185,650 ⁽²⁾	\$450,000 ⁽⁵⁾
2013	**	**	**	\$139,321 ⁽²⁾	\$199,054 ⁽³⁾	\$100,000 ⁽¹⁾	\$438,375 ⁽⁶⁾
2014	**	**	\$22,454 ⁽¹⁾	\$110,362 ⁽³⁾	\$198,687 ⁽²⁾	\$100,000 ⁽¹⁾	\$431,503 ⁽⁷⁾
2015	\$24,934 ⁽¹⁾	**	**	\$50,000 ⁽²⁾	\$165,781 ⁽²⁾	\$191,517 ⁽³⁾	\$432,232 ⁽⁸⁾
2016	\$47,683 ⁽²⁾	**	**	\$98,056 ⁽¹⁾	\$158,238 ⁽²⁾	\$146,536 ⁽³⁾	\$450,513 ⁽⁸⁾
Total	\$227,573 ⁽⁷⁾	\$140,303 ⁽⁶⁾	\$76,089 ⁽³⁾	\$977,159 ⁽²⁵⁾	\$2,132,691 ⁽⁴³⁾	\$1,420,031 ⁽²³⁾	\$4,973,846 ⁽¹⁰⁷⁾

Competitive Research Grant Award Program Individual Award Recipients

FY 2006 Individual CRG Program Awards

Black Hills State University

- Scott F. Stoltenberg, Psychology – “Gambling, Impulsivity & Neurotransmitter Genes” (Grant Award: \$15,600)

South Dakota School of Mines & Technology

- Gregory A. Buck, Mechanical Engineering – “Ethanol Autothermal Reforming Reactor for On-Board Hydrogen Production for Fuel Cell Vehicles” (Grant Award: \$24,588)
- Li Chen, Electrical and Computer Engineering – “Development of a Design Center for Radiation-Hard Microelectronics” (Grant Award: \$22,349)
- Hao Fong, Chemistry and Chemical Engineering – “Electrospun Carbon/Graphite Nanofibers for Fuel Cell Related Applications Including Hydrogen Storage and Catalyst Supporting Material” (Grant Award: \$17,173)
- James Stone, Civil and Environmental Engineering – “Furthering Uranium and Heavy Metal Remediation Capacities Through Applied Research” (Grant Award: \$21,242)
- Nian Zhang, Electrical and Computer Engineering – “A Computerized Electrode Array for Electrocardiology Applications” (Grant Award: \$22,259)

South Dakota State University

- Alfred S. Andrawis, Electrical Engineering and Computer Science – “Fiber Optic Gas Leak Detector” (Grant Award: \$29,553)
- Donald Auger, Biology-Microbiology – “Quantitative Trait Analysis of Seed Dormancy, Seed Shattering, and Indeterminate Flowering in Cuphea, a Potential Oilseed Plant” (Grant Award: \$23,672)
- David Galipeau, Electrical Engineering – “Nanosensors – Center for Accelerated Applications at the Nanoscale” (Grant Award: \$31,277)
- Xiangming Guan, Pharmaceutical Sciences – “Inhibition of Glutathione Reductase as a Novel Approach to Reverse Ovarian Cancer Resistance to Chemotherapy” (Grant Award: \$29,226)
- MaryLou Mylant, Nursing – “SDSU Student Nurse Family Partnership Program” (Grant Award: \$26,180)
- Srinath Palakurthi, Pharmaceutical Sciences – “A Multi-step Approach for the Targeted Therapy of Ovarian Cancer Using the Novel Polyamine-conjugated Dendrimers as Drug Carriers” (Grant Award: \$21,099)
- Joseph M. Santos, Economics – “An Economic History of Futures Trading in the United States” (Grant Award: \$25,815)
- Daniel Schaal, Mathematics and Statistics – “Research in Combinatorics” (Grant Award: \$26,016)
- Songxin Tan, Electrical Engineering and Computer Science – “Development of a Multi-wavelength Polarimetric Lidar Remote Sensing Technique for Vegetation Applications” (Grant Award: \$24,042)

University of South Dakota

- Ranjit T. Koodali, Chemistry – “Modified Titanium Dioxide Nanostructured Materials as Advanced Photocatalysts” (Grant Award: \$18,056)
- Paula Mabee, Biology – “Bioinformatics: A Case Study Integrating Genomic and Evolutionary Databases” (Grant Award: \$27,357)
- Grigoriy Sereda, Chemistry – “Design and Exploration of Photoactivated Catalysts Based on Modified Graphite” (Grant Award: \$18,395)
- Susanne Skyrn, Music – “A Teaching/Performing Edition of 18th-Century Spanish Keyboard Music” (Grant Award: \$20,394)

FY 2007 Individual CRG Program Awards

Black Hills State University

- David Siemens, Science/Biology – “Gene discovery under drought and herbivory in plants: Functional genomics in close wild relatives of the model organism *Arabidopsis thaliana*” (Grant Award: \$15,847)

Dakota State University

- Xinwen Fu, Business and Information Systems – “Effectively and Efficiently Tracking Malicious Use of Anonymous Communication” (Grant Award: \$24,225)
- Kevin Streff, Business and Information Systems – “Information Assurance Awareness Measurement Research Project” (Grant Award: \$29,139)
- Justin L. Blessinger, English – “Semi-Automatic Essay Grader and Rubric Tool” (Grant Award: \$15,311)

Northern State University

- Richard L. Peterson, Chemistry – “Investigation into the Synthesis of Transition Metal Substituted Silicate Materials” (Grant Award: \$15,925)

South Dakota School of Mines & Technology

- Steve Smith, Nanoscience and Nanoengineering – “Nanoscale Ultrafast Spectroscopy of Nano-and Energy-Materials” (Grant Award: \$29,620)
- Andrea E. Surovek, Civil and Environmental Engineering – “Response of Composite Partially-Restrained Connections Subjected to Blast Loads” (Grant Award: \$21,679)
- Rajesh K. Sani, Chemical and Biological Engineering – “Generation of Energy from Renewable Biofuels Using Microorganisms from Deep Subsurface of Homestake Mine, Lead, South Dakota” (Grant Award: \$18,597)
- Todd J. Menkhous, Chemical and Biological Engineering – “Development of Separation Processes for the Recovery of High-Value Products from Forestry and Plant Agriculture Feedstocks” (Grant Award: \$24,190)
- Thomas P. Montoya, Electrical and Computer Engineering – “Loaded Antenna Development Using Direct-Write Processes with Photo-Active Nano-Inks” (Grant Award: \$25,617)

South Dakota State University

- Hesham Fahmy, Pharmaceutical Sciences – “Development of potent skin cancer chemopreventive agents from marine sources” (Grant Award: \$21,983)
- Omathanu P. Perumal, Pharmaceutical Sciences – “Dendritic Nanopolymers as Novel Vehicles for Transdermal Drug Delivery” (Grant Award: \$21,474)
- Gareth E. Davies, Pharmaceutical Sciences – “Molecular Pathogenesis of HIV Associated Lipodystrophy” (Grant Award: \$21,833)
- Shanzhong Duan, Mechanical Engineering – “Efficient Computer Simulation of Multibody Dynamic Systems” (Grant Award: \$23,530)
- Elizabeth A. Droke, Nutrition, Food Science, and Hospitality – “The Protective Role of Soy Against Complications Associated with Obesity and Chronic Inflammation” (Grant Award: \$19,286)
- Daniel Cervantes Laurean, Chemistry and Biochemistry – “High throughput screening assay for inhibitors of protein glycation” (Grant Award: \$19,675)
- Tagir Gilmanov, Biology and Microbiology – “Developing new generation mathematical models for grassland ecosystems of South Dakota” (Grant Award: \$19,025)
- Li Qian, Engineering Technology and Management – “Process modeling and optimization for high speed machining of hardened tool steels” (Grant Award: \$20,157)

University of South Dakota

- Kai Wang, Computer Science – “Enhance the Performance of ACTS by Processor Virtualization” (Grant Award: \$27,083)
- Yunkai Liu, Computer Science – “Haplotype Reconstruction and Decompositions in Diploid Species with the Perfect Phylogeny Model” (Grant Award: \$27,564)

FY 2008 Individual CRG Program Awards

Dakota State University

- Sreekanth Malladi, Business and Information Systems – “Researching cryptographic protocol security under new and complex scenarios.” (Grant Award: \$25,113)
- Barbara Szczerbinska, Physics – “Theoretical study of neutrino-nucleus reactions relevant to solar, atmospheric and long baseline neutrino experiments.” (Grant Award: \$20,329)
- Stephen Graham, Business and Information Systems – “Mapping among Disparate Ontologies for Physics Education.” (Grant Award: \$26,186)

South Dakota School of Mines & Technology

- Lance Roberts, Civil and Environmental Engineering – “Reliability-Based Design Methodologies for Foundation Systems in Transportation Infrastructure.” (Grant Award: \$20,944)
- David Dixon, Chemistry – “Cooperative Research Proposal for Development of Ultra Fine Powdered Rubber (UFPR) Prototype Equipment and UFPR Rubber/Polymer Formulations for Commercial Markets.” Industry partner – Enviro Technologies. (Grant Award: \$37,365)
- S. Phillip Ahrenkiel, Nanoscience and Nanoengineering – “Growth Kinetics during Recrystallization of Amorphous Silicon.” (Grant Award: \$23,361)

South Dakota State University

- Alan Young, Veterinary Science – “Circulating Nucleic Acids Derived from Follicular Dendritic Cells as a Diagnostic Marker for Scrapie Pathogenesis.” Industry partner – Chronix. (Grant Award: \$22,737)
- Philip Hardwidge, Veterinary Science – “Discovery and characterization of novel ETEC antigens for human vaccine development.” Industry partner – Rural Technologies, Inc. (Grant Award: \$23,481)
- Youngjae You, Chemistry and Biochemistry – “Novel Third Generation Photosensitizers Specific for Apoptotic Cell Death by Targeting Mitochondria.” (Grant Award: \$22,925)
- Ying Fang, Veterinary Science – “Antigenic characterization of bovine viral diarrhea virus: development of improved diagnostic tests for detection and differentiation type 1 and type 2 viruses.” Industry partner – Rural Technologies, Inc. (Grant Award: \$22,076)
- Marek Malecki, Pharmaceutical Sciences – “Cancer Suicide Gene Therapy.” (Grant Award: \$25,913)
- Ron Utecht, Chemistry and Biochemistry – “Reducing the Impact of Bovine Mastitis with a Novel Chitosan Formulation Administered at Dry-Off.” Industry partner – SLI, Rural Technologies, Inc. (Grant Award: \$29,316)
- Sunho Lim, Electrical Engineering and Computer Science – “Development of a Reliable and Delay-Sensitive Medium Access Control Scheme for Vehicular Ad Hoc Networks.” (Grant Award: \$26,359)
- Din Chen, Mathematics and Statistics – “Developing a statistical mixed model and a full Bayesian integrated approach to identify the differentially expressed genes in non-replicated/small-sample microarray experiment.” (Grant Award: \$35,247)

The University of South Dakota

- Dongming Mei, Physics and Earth Science – “Laser Isotope Separation Facility at Homestake for DUSEL Projects.” (Grant Award: \$15,025)

FY 2009 Individual CRG Program Awards

South Dakota School of Mines & Technology

- Dr. Lance A. Roberts – “Recycled Plastic Deep Foundation System for Lightly Loaded Structures in Expansive Shale” (Grant Award: \$58,536)
- Dr. Linxia Gu – “Stent-induced Arterial Strain and Stress as a Determinant of Coronary Restenosis” (Grant Award: \$84,792)

South Dakota State University

- Dr. Omathanu P. Perumal – “Zein Nanoparticles for Drug Delivery Applications”, \$99,427
- Dr. Youngjae You – “Novel Drug Delivery Strategy: Visible/Near IR-controlled Drug Release” (Grant Award: \$84,241)

University of South Dakota

- Dr. Dongming Mei – “Liquid Argon-based Direct Dark Matter Searches at Homestake”, \$92,454
- Dr. Haoran Sun – “Fluorinated Materials for Dye-sensitized Solar Cells” (Grant Award: \$80,000)

FY 2010 Individual CRG Program Awards

Northern State University

- Alyssa Kiesow, Biology – “Characterization & Isolation of Microsatellite Loci for Three Species, Ring-necked Pheasants, Common Yellowthroats, & False Map Turtles, for the Purposes of Conducting Population Genetic Structure Analyses” (Grant Award: \$37,710; University Match: \$39,198)

South Dakota School of Mines & Technology

- Rajesh Sani, Chemical & Biological Engineering – “Development of an Overexpressing Thermostable Cellulase Strain Using a Bacterium Isolated from the Homestake Gold Mine, Lead, South Dakota” (Grant Award: \$82,463; University Match: \$82,463)

South Dakota State University

- Omathanu Perumal, Pharmaceutical Sciences – “Zein Nanoparticles for Drug Delivery Applications” (Grant Award: \$93,161; University Match: \$93,164)
- Youngjae You, Chemistry & Biochemistry – “Novel Drug Delivery Strategy: Visible/Near IR-controlled Drug Release” (Grant Award: \$67,658; University Match: \$67,807)

University of South Dakota

- Gina Forster, Basic Biomedical Sciences – “Effects of Mild Traumatic Brain Injury on Stress Sensitivity in an Animal Model” (Grant Award: \$100,000; University Match: \$100,000)
- Hongmin Wang, Basic Biomedical Sciences – “Generation of Ubiquilin Mouse Models for Studying Huntington's Disease” (Grant Award: \$100,000; University Match: \$100,000)

FY 2011 Individual CRG Program Awards

Black Hills State University

- Dan Durben, Science – “The Efficacy of Hops (*Humulus lupulus*) to Control *Saprolegnia* Fungal Infections on Salmonid Eggs” (Grant Award: \$43,309; University Match: \$64,984)
- David J. Bergmann, Science – “Metagenomic Analysis of Drainage and Service Water in the Deep Underground Science and Engineering Laboratory (DUSEL) at the Homestake Mine” (Grant Award: \$80,200; University Match: \$80,200)

South Dakota School of Mines & Technology

- Kenneth M. Benjamin, Chemical and Biological Engineering – “Molecular Investigation of Adsorption During Nickel-Catalyzed Supercritical Water Gasification for Bioenergy and Biofuels” (Grant Award: \$44,645; University Match: \$44,645)

South Dakota State University

- Adam D. Hoppe, Chemistry and Biochemistry – “Development of High-Resolution Imaging of Receptor Signaling Complexes on the Surfaces of Living Cells” (Grant Award: \$93,271; University Match: \$93,379)
- Hemachand Tummala, Pharmaceutical Sciences – “Characterization of a Novel Drug Target for Alzheimer’s Disease” (Grant Award: \$96,926; University Match: \$98,978)

University of South Dakota

- Carlos M. Telleria, Basic Biomedical Sciences – “Enhancement of the Lethality of Platinum-Based Therapy by Antiprogestins in Ovarian Cancer: Preclinical Studies Using Animal Models Resembling Disease Initiation, Progression and Metastasis” (Grant Award: \$85,000; University Match: \$85,000)
- Ying Deng, Biomedical Engineering Program – “Development of Biomimetic Nanofibrous Scaffold for Annulus Fibrosus Engineering” (Grant Award: \$85,000; University Match: \$100,008)

FY 2012 Individual CRG Program Awards

South Dakota State University

- Quiquan Qiao, Electrical Engineering and Computer Science – “Novel Polymers for Highly Efficient Organic Solar Cells” (Grant Award: \$93,450)
- Katie Bertrand, Wildlife and Fisheries Sciences – “Will climate change exacerbate habitat fragmentation for Topeka shiners in Great Plains streams? Establishing a modular experimental stream system to increase competitiveness and research capacity at SDSU” (Grant Award: \$92,200)

University of South Dakota

- Gopinath Mani, Biomedical Engineering – “Polymer-Free Dual Drug-Eluting Coronary Stents” (Grant Award: \$87,450)
- Vincente Guisepe, Physics – “Development of a Radon Progeny Surface Contamination Study for Deep Underground Experiments” (Grant Award: \$83,450)
- Hongmin Wang, Biomedical Sciences – “Role of Ubiquitin in Ischemic Stroke” (Grant Award: \$93,450)

FY 2013 Individual CRG Program Awards

South Dakota School of Mines & Technology

- Dr. Adam French, Atmospheric Sciences – “An investigation of a non-traditional severe storm evolution: Isolated supercells evolving from squall lines” (Grant Amount: \$54,011)
- Dr. Randy Hoover, Electrical/Computer Engineering – “Increasing Autonomous Capability Through Collaborative UAV/UGV Swarms” (Grant Amount: \$85,310)

South Dakota State University

- Dr. Katie Bertrand, Natural Resource Management – “Year 2 Continuation Proposal: Will climate change influence population dynamics of native fish in Great Plains streams? Enhancing a modular experimental stream system to increase competitiveness and research capacity at SDSU” (Grant Amount: \$49,629)
- Dr. Qiquan Qiao, Electrical Engineering – “Novel Polymers for Highly Efficient Organic Solar Cells (Year 2 Continuation Proposal)” (Grant Amount: \$50,000)
- Dr. Cheng Zhang, Chemistry/Biochemistry – “Design and Synthesis of Electro-Optic Chromophores for Spatial Light Modulation” (Grant Amount: \$99,425)

University of South Dakota

- Dr. Khosrow Rezvani, Basic Biomedical Sciences – “Regulation of p53 stability and function by the UBXN2A, a new strategy for cancer therapy” (Grant Amount: \$100,000)

FY2014 Individual CRG Program Awards

Northern State University

- Dr. Jon C. Mitchell, Biology – “Molecular characterization of insecticidal activity from environmentally-isolated bacterial strains” (Grant Amount: \$22,454)

South Dakota School of Mines & Technology

- Dr. Adam French, Atmospheric Sciences – “An investigation of a non-traditional severe storm evolution: Isolated supercells evolving from squall lines (Year 2 Continuation Proposal)” (Grant Amount: \$60,362)
- Dr. Bora Cetin, Civil and Environmental Engineering – “Remediation of acid mine drainage and mine tailings with high carbon fly ash” (Grant Amount: \$25,000)
- Dr. Kevin Hadley, Chemical & Biological Engineering – “Development of a proton hopping water model” (Grant Amount: \$25,000)

South Dakota State University

- Dr. Gregory Michna, Mechanical Engineering – “Toward realization of pulsating heat pipe electronics cooling system” (Grant Amount: \$99,118)
- Dr. Cheng Zhang, Chemistry/Biochemistry – “Development of a common strategy to address fundamental problems in organic electro-optic, photovoltaic and electronic thin film devices (Year 2 Continuation Proposal)” (Grant Amount: \$99,569)

University of South Dakota

- Dr. Sathyanesan, Basic Biomedical Sciences – “Development of a therapeutic trophic factor for neuropsychiatric disorder” (Grant Amount: \$100,000)

FY2015 Individual CRG Program Awards

Black Hills State University

- Dr. Daniel J. Asunskis, Chemistry – “Assessing the Toxicity of Emerging Nanomaterials for Renewable Energy” (Grant Amount: \$24,934)

South Dakota School of Mines & Technology

- Dr. Soonkie Nam, Civil and Environmental Engineering – “Improvement of Engineering Properties of Soil with Agricultural By-products” (Grant Amount: \$25,000)
- Dr. Purushotham Tukkaraja, Mining Engineering – “Preliminary Analysis of Surface Mine Inversion Dispersion Techniques through Numerical Simulation Studies” (Grant Amount: \$25,000)

South Dakota State University

- Dr. Trisha Jackson, Geography – “Farming with Biochar: Quantifying Gains in Natural and Financial Capital” (Grant Amount: \$77,788)
- Dr. Reinaldo Tonkoski, Electrical Engineering – “Development of Reliable and Sustainable Microgrids” (Grant Award: \$87,993)

University of South Dakota

- Dr. Samuel Sathyanesan, Basic Biomedical Sciences – “Development of a Therapeutic Trophic for Neuropsychiatric Disorders” (Grant Award: \$99,953)
- Dr. Zhenqiang ‘Rick’ Wang, Chemistry – “Mimicking Protein-Ligand Binding in Synthetic Supercontainers” (Grant Award: \$66,599)
- Dr. Meghann Jarchow, Biology – “Prairies in Multifunctional Landscapes: Understanding the Effects of Disturbance and Plant Phenology” (Grant Award: \$24,965)