

Fiscal Year 2009 Nuclear Energy University Program Research and Development Awards

#	Project #	Initiative	Title	Organization	PI	Collaborators	Estimated University Funding*
1	09-269	AFCI	Fundamental Understanding of Ambient and High-Temperature Plasticity Phenomena in Structural Materials in Advanced Reactors	Georgia Institute of Technology	Deo, Chaitanya	<ul style="list-style-type: none"> • McDowell, David - Georgia Institute of Technology • Zhu, Ting - Georgia Institute of Technology 	\$489,488
2	09-475	AFCI	Advanced Elastic/Inelastic Nuclear Data Development Project	Idaho State University	Wells, Douglas	<ul style="list-style-type: none"> • Chowdhury, Partha - University of Massachusetts, Lowell • Greife, Uwe - Colorado School of Mines • Hicks, Sally Fisher - University of Dallas • Hill, Tony - Los Alamos National Laboratory • Kawano, Toshihiko - Los Alamos National Laboratory • McEllistrem, Marcus T. - University of Kentucky • Slaughter, David M. - University of Utah • Tsvetkov, Pavel - Texas A&M University • Vanhoy, Jeffrey Rahn - United States Naval Academy 	\$1,497,500
3	09-095	AFCI	Heterogeneous Recycling in Fast Reactors	Massachusetts Institute of Technology	Forget, Benoit	<ul style="list-style-type: none"> • Driscoll, Michael - Massachusetts Institute of Technology • Piet, Steven J. - Idaho National Laboratory • Pope, Michael - Idaho National Laboratory 	\$292,786
4	09-144	AFCI	Thermodynamic Development of Corrosion Rate Modeling in Iron Phosphate Glasses	Missouri University of Science and Technology	Schlesinger, Mark	<ul style="list-style-type: none"> • Brow, Richard - Missouri University of Science and Technology 	\$372,344

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5	09-365	AFCI	Development of Subspace-Based Hybrid Monte Carlo-Deterministic Algorithms for Reactor Physics Calculations	North Carolina State University	Abdel-Khalik, Hany	<ul style="list-style-type: none"> • Gardner, Robin - North Carolina State University • Mattingly, John - Sandia National Laboratory • Sood, Avneet - Los Alamos National Laboratory 	\$479,358
6	09-351	AFCI	SiC Schottky Diode Detectors for Measurement of Actinide Concentrations from Alpha Activities in Molten Salt Electrolyte	Ohio State University	Windl, Wolfgang	<ul style="list-style-type: none"> • Blue, Thomas E. - Ohio State University 	\$489,643
7	09-416	AFCI	Simulations of Failure via Three-Dimensional Cracking in Fuel Cladding for Advanced Nuclear Fuels	Oklahoma State University	Lu, Hongbing	<ul style="list-style-type: none"> • Bardenhagen, Scott - Bardenhagen Consulting • Komanduri, Ranga - Oklahoma State University 	\$881,949
8	09-247	AFCI	Improvements to Nuclear Data and Its Uncertainties by Theoretical Modeling	Rensselaer Polytechnic Institute (Troy, NY)	Danon, Yaron	<ul style="list-style-type: none"> • Nazarewicz, Witold - University of Tennessee • Prinja, Anil - University of New Mexico • Talou, Patrick - Los Alamos National Laboratory 	\$871,060
9	09-349	AFCI	Sharp Interface Tracking in Rotating Microflows of Solvent Extraction	State University of New York at Stony Brook	Glimm, James	<ul style="list-style-type: none"> • de Almeida, Valmor - Oak Ridge National Laboratory • Jiao, Xiangmin (Jim) - State University of New York at Stony Brook • Simms, Brett - Grambling State University 	\$588,072
10	09-048	AFCI	Bulk Nanostructured FCC Steels with Enhanced Radiation Tolerance	Texas A&M University	Zhang, Xinghang	<ul style="list-style-type: none"> • Allen, Todd - University of Wisconsin, Madison • Hartwig, K.T. - Texas A&M University • Yang, Y. - University of Wisconsin, Madison 	\$633,830

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11	09-357	AFCI	Fuel Performance Experiments and Modeling: Fission Gas Bubble Nucleation and Growth in Alloy Nuclear Fuels	Texas A&M University	McDeavitt, Sean	<ul style="list-style-type: none"> • Kennedy, J. Rory - Idaho National Laboratory • Shao, Lin - Texas A&M University • Tsvetkov, Pavel - Texas A&M University • Wirth, Brian D. - University of California, Berkeley 	\$1,473,930
12	09-408	AFCI	Computational Design of Advanced Nuclear Fuels	University of California, Davis	Savrasov, Sergey	<ul style="list-style-type: none"> • Haule, Kristjan - Rutgers University • Kotliar, Gabriel - Rutgers University 	\$1,178,644
13	09-321	AFCI	Data Collection Methods For Validation of Advanced Multi-Resolution Fast Reactor Simulations	University of Idaho	Tokuhiro, Akira	<ul style="list-style-type: none"> • Momozaki, Yoichi - Argonne National Laboratory • Pointer, David - Argonne National Laboratory • Reed, Claude - Argonne National Laboratory • Ruggles, Art - University of Tennessee 	\$912,317
14	09-185	AFCI	Simulations of the Thermodynamic and Diffusion Properties of Actinide Oxide Fuel Materials	University of Michigan	Becker, Udo		\$479,558
15	09-221	AFCI	Adsorptive Separation and Sequestration of Krypton, I and C14 on Diamond Nanoparticles	University of Missouri, Columbia	Ghosh, Tushar	<ul style="list-style-type: none"> • Loyalka, Sudarshan - University of Missouri, Columbia • Prelas, Mark - University of Missouri, Columbia • Viswanath, Dabir S. - University of Missouri 	\$485,177

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16	09-315	AFCI	Development of Alternative Technetium Waste Forms	University of Nevada, Las Vegas	Czerwinski, Kenneth	<ul style="list-style-type: none"> • Fattahi, Massoud - Laboratoire Subatech • Forster, Paul - University of Nevada, Las Vegas • Hartmann, Thomas - University of Nevada, Las Vegas • Jarvinen, Gordon - Los Alamos National Laboratory • Kennedy, J. Rory - Idaho National Laboratory • Kolman, Dave - Los Alamos National Laboratory • Poineau, Frederic - University of Nevada, Las Vegas • Weck, Philippe - University of Nevada, Las Vegas 	\$656,347
17	09-350	AFCI	Quantification of UV-Visible and Laser Spectroscopic Techniques for Materials Accountability and Process Control	University of Nevada, Las Vegas	Czerwinski, Kenneth	<ul style="list-style-type: none"> • Bryan, Samuel - Pacific Northwest National Laboratory • Jubin, Robert - Oak Ridge National Laboratory • Paviet-Hartmann, Patricia - University of Nevada, Las Vegas • Regalbutto, Monica - Argonne National Laboratory 	\$494,935
18	09-391	AFCI	High-Fidelity Space-Time Adaptive Multiphysics Simulations in Nuclear Engineering	University of Nevada, Reno	Solin, Pavel	<ul style="list-style-type: none"> • Ragusa, Jean - Texas A&M University 	\$587,381
19	09-129	AFCI	Advanced Mesh-Enabled Monte Carlo Capability for Multi-Physics Reactor Analysis	University of Wisconsin, Madison	Wilson, Paul	<ul style="list-style-type: none"> • Brown, Forrest - Los Alamos National Laboratory • Clarno, Kevin - Oak Ridge National Laboratory • Evans, Thomas - Oak Ridge National Laboratory • Tautges, Tim - Argonne National Laboratory 	\$498,040

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20	09-225	AFCI	Ab Initio Enhanced Calphad Modeling of Actinide Rich Nuclear Fuels	University of Wisconsin, Madison	Morgan, Dane	<ul style="list-style-type: none"> • Allen, Todd - University of Wisconsin, Madison • Chang, Y. Austin - University of Wisconsin, Madison • Yang, Y. - University of Wisconsin, Madison 	\$486,338
21	09-282	AFCI	Development of Diffusion Barrier Coatings and Deposition Technologies for Mitigating Fuel Cladding Chemical Interactions (FCCI)	University of Wisconsin, Madison	Sridharan, Kumar	<ul style="list-style-type: none"> • Allen, Todd - University of Wisconsin, Madison • Cole, James - Idaho National Laboratory • Yang, Y. - University of Wisconsin, Madison 	\$478,709
22	09-319	AFCI	Thermal Properties of LiCl-KCl Molten Salt for Nuclear Waste Separation	University of Wisconsin, Madison	Sridharan, Kumar	<ul style="list-style-type: none"> • Allen, Todd - University of Wisconsin, Madison • Anderson, Mark - University of Wisconsin, Madison • Simpson, Michael - Idaho National Laboratory 	\$487,584
23	09-453	NGNP	Irradiation Creep in Graphite	Boise State University	Ubic, Rick	<ul style="list-style-type: none"> • Butt, Darryl - Boise State University • Windes, Will - Idaho National Laboratory 	\$785,396
24	09-347	NGNP	Modeling the Stress Strain Relationships and Predicting Failure Probabilities For Graphite Core Components	Cleveland State University	Duffy, Stephen		\$269,849
25	09-257	NGNP	TRISO-Coated Fuel Durability Under Extreme Conditions	Colorado School of Mines	Reimanis, Ivar	<ul style="list-style-type: none"> • Butt, Darryl - Boise State University • Gorman, Brian P. - Colorado Center for Advanced Ceramics 	\$992,864

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#	Project #	Initiative	Title	Organization	PI	Collaborators	Estimated University Funding*
26	09-396	NGNP	An Innovative and Advanced Coupled Neutron Transport and Thermal Hydraulic Method (Tool) for the Design, Analysis and Optimization of VHTR/NGNP Prismatic Reactors	Georgia Institute of Technology	Rahnema, Farzad	<ul style="list-style-type: none"> • Garimella, Srinivas - Georgia Institute of Technology • Ougouag, Abderrafi M. - Idaho National Laboratory • Zhang, Dingkan - Georgia Institute of Technology 	\$666,396
27	09-030	NGNP	Removal of 14C from Irradiated Graphite for Graphite Recycle and Waste Volume Reduction	Idaho State University	Dunzik-Gougar, Mary Lou	<ul style="list-style-type: none"> • Fachinger, Johannes - Forschungszentrum Jülich GmbH • Lalk, Jörg - Pebble Bed Modular Ltd • Marsden, Barry - University of Manchester • Windes, Will - Idaho National Laboratory 	\$681,205
28	09-111	NGNP	Millimeter-Wave Thermal Analysis Development and Application to Gen IV Reactor Materials	Massachusetts Institute of Technology	Woskov, Paul	<ul style="list-style-type: none"> • Sundaram, S. K. - Pacific Northwest National Laboratory 	\$497,500
29	09-068	NGNP	Accurate Development of Thermal Neutron Scattering Cross Section Libraries	North Carolina State University	Hawari, Ayman	<ul style="list-style-type: none"> • Dunn, Michael - Oak Ridge National Laboratory 	\$1,089,702
30	09-097	NGNP	Understanding Creep Mechanisms in Graphite with Experiments, Multiscale Simulations, and Modeling	North Carolina State University	Eapen, Jacob	<ul style="list-style-type: none"> • Burchell, Timothy - Oak Ridge National Laboratory • Mansur, Louis - Oak Ridge National Laboratory • Murty, K. Linga - North Carolina State University 	\$803,623
31	09-288	NGNP	Multiaxial creep-fatigue and creep-ratcheting failures of Grade 91 and Haynes 230 alloys toward addressing the design issues of Gen IV nuclear power plants	North Carolina State University	Hassan, Tasnim	<ul style="list-style-type: none"> • Carroll, Laura J. - Idaho National Laboratory • Lissenden, Cliff J. - Pennsylvania State University 	\$925,984
32	09-366	NGNP	Verification & Validation of High-Order Short-Characteristics-Based Deterministic Transport Methodology on Unstructured Grids	North Carolina State University	Azmy, Yousry	<ul style="list-style-type: none"> • Ferrer, Rodolfo - Idaho National Laboratory 	\$496,398

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#	Project #	Initiative	Title	Organization	PI	Collaborators	Estimated University Funding*
33	09-479	NGNP	Microscale Heat Conduction Models and Doppler Feedback	North Carolina State University	Hawari, Ayman	<ul style="list-style-type: none"> • Ortensi, Javier - Idaho National Laboratory • Ougouag, Abderrafi M. - Idaho National Laboratory 	\$1,074,086
34	09-522	NGNP	Optimizing Neutron Thermal Scattering Effects in Very High Temperature Reactors	North Carolina State University	Hawari, Ayman	<ul style="list-style-type: none"> • Ougouag, Abderrafi M. - Idaho National Laboratory 	\$1,074,086
35	09-158	NGNP	Investigation of Countercurrent Helium-air Flows in Air-ingress Accidents for VHTRs	Ohio State University	Sun, Xiaodong	<ul style="list-style-type: none"> • Christensen, Richard N. - Ohio State University • Oh, Chang - Idaho National Laboratory 	\$447,500
36	09-346	NGNP	Testing of Performance of Optical Fibers Under Irradiation in Intense Radiation Fields, When Subjected to Very High Temperatures	Ohio State University	Blue, Thomas E.	<ul style="list-style-type: none"> • Dickerson, Bryan - Luna Innovations • Fielder, Robert - Luna Innovations • Windl, Wolfgang - Ohio State University 	\$525,832
37	09-320	NGNP	Non Destructive Thermal Analysis and In Situ Investigation of Creep Mechanism of Graphite and Ceramic Composites using Phase-sensitive THz Imaging & Nonlinear Resonant Ultrasonic Spectroscopy	Rensselaer Polytechnic Institute	Zhang, Xi-Cheng	<ul style="list-style-type: none"> • Han, Pengyu - Rensselaer Polytechnic Institute • Hurley, David H. - Idaho National Laboratory 	\$447,500

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#	Project #	Initiative	Title	Organization	PI	Collaborators	Estimated University Funding*
38	09-241	NGNP	A Distributed Fiber Optic Sensor Network for Online 3-D Temperature and Neutron Fluence Mapping in a VHTR Environment	Texas A&M University	Bragg-Sitton, Shannon	<ul style="list-style-type: none"> • Bertch, Timothy - General Atomics • Dickerson, Bryan - Luna Innovations • Fielder, Robert - Luna Innovations • McEachern, Donald - General Atomics • Ougouag, Abderrafi M. - Idaho National Laboratory • Sang, Alex - Luna Innovations • Tsvetkov, Pavel - Texas A&M University 	\$757,144
39	09-341	NGNP	Investigation on the Core Bypass Flow in a Very High Temperature Reactor	Texas A&M University	Hassan, Yassin		\$483,137
40	09-464	NGNP	CFD Model Development and Validation for High Temperature Gas Cooled Reactor Cavity Cooling System (RCCS) Applications	Texas A&M University	Hassan, Yassin	<ul style="list-style-type: none"> • Corradini, Michael - University of Wisconsin, Madison • Tokuhiko, Akira - University of Idaho 	\$568,956
41	09-515	NGNP	Study of Air ingress across the duct during the accident conditions	Texas A&M University	Hassan, Yassin	<ul style="list-style-type: none"> • Ugaz, Victor - Texas A&M University 	\$551,108
42	09-390	NGNP	Verification of the CENTRM Module for Adaptation of the SCALE Code to NGNP Prismatic and PBR Core Designs	University of Arizona	Ganapol, Barry		\$412,189
43	09-080	NGNP	Integral and Separate Effects Tests for Thermal Hydraulics Code Validation for Liquid-Salt Cooled Nuclear Reactors	University of California, Berkeley	Peterson, Per		\$485,501
44	09-113	NGNP	Mechanisms Governing the Creep Behavior of High Temperature Alloys for Generation IV Nuclear Energy Systems	University of Cincinnati	Vasudevan, Vijay	<ul style="list-style-type: none"> • Carroll, Laura J. - Idaho National Laboratory • Sham, T.L. - Oak Ridge National Laboratory 	\$690,993

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45	09-312	NGNP	ALD Produced B ₂ O ₃ , Al ₂ O ₃ and TiO ₂ Coatings on Gd ₂ O ₃ Burnable Poison Nanoparticles	University of Colorado, Boulder	Weimer, Alan	<ul style="list-style-type: none"> • King, David M. - University of Colorado, Boulder • Lichy, Paul - University of Colorado, Boulder • Rozewski, Eran - University of Colorado, Boulder 	\$497,500
46	09-151	NGNP	Experimental Study and Computational Simulations of Key Pebble Bed Thermomechanics Issues for Design and Safety	University of Idaho	Tokuhiro, Akira	<ul style="list-style-type: none"> • Cogliati, Joshua - Idaho National Laboratory • Ougouag, Abderrafi M. - Idaho National Laboratory • Potirniche, Gabriel - University of Idaho • Rink, Karl - University of Idaho 	\$557,279
47	09-458	NGNP	Prediction and Monitoring Systems of Creep-Fracture Behavior of 9Cr-1Mo Steels for Reactor Pressure Vessels	University of Idaho	Potirniche, Gabriel	<ul style="list-style-type: none"> • Barlow, III, Fred D. - University of Idaho • Charit, Indrajit - University of Idaho • Rink, Karl - University of Idaho 	\$503,188
48	09-516	NGNP	Understanding Fundamental Material Degradation Processes in High Temperature Aggressive Chemomechanical Environments	University of Illinois, Urbana-Champaign	Stubbins, James	<ul style="list-style-type: none"> • Gewirth, Andrew A. - University of Illinois, Urbana-Champaign • Sehitoglu, Huseyin - University of Illinois, Urbana-Champaign • Sofronis, Petros - University of Illinois, Urbana-Champaign 	\$1,497,500
49	09-304	NGNP	Multi-Scale Multi-physics Methods Development for the Calculation of Hot-Spots in the NGNP	University of Michigan	Downar, Thomas	<ul style="list-style-type: none"> • Knoll, Dana - Idaho National Laboratory • Martin, William - University of Michigan • Seker, Volkan - University of Michigan 	\$506,516

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50	09-354	NGNP	Corrosion and Creep of Candidate Alloys in High Temperature Helium and Steam Environments for the NNGP	University of Michigan	Was, Gary	<ul style="list-style-type: none"> • Jones, J. Wayne - University of Michigan • Pollock, Tresa - University of Michigan 	\$747,500
51	09-511	NGNP	Creation of a Full-Core HTR Benchmark with the Fort St. Vrain Initial Core and Validation of the DHF Method with Helios for NNGP Configurations	University of Michigan	Martin, William	<ul style="list-style-type: none"> • Baxter, Alan - General Atomics • Lee, John C. - University of Michigan • Wemple, Chuck - Studsvik-Scandpower 	\$421,288
52	09-376	NGNP	Fission Product Sorptivity in Graphite	University of Missouri, Columbia	Tompson, Robert		\$456,969
53	09-075	NGNP	Identifying and Understanding Environment-Induced Crack Propagation Behavior in Ni-Based Superalloy INCONEL 617	University of Nevada, Las Vegas	Ma, Longzhou	<ul style="list-style-type: none"> • Ballinger, Ronald - Massachusetts Institute of Technology 	\$317,700
54	09-417	NGNP	Graphite Oxidation Simulation in HTR Accident Conditions	University of New Mexico	El-Genk, Mohamed	<ul style="list-style-type: none"> • Lommers, Lewis - AREVA • Mays, Brian - AREVA • Tournier, Jean-Michel - University of New Mexico 	\$442,063
55	09-510	NGNP	Tritium Sequestration in Gen IV NNGP Gas Stream via Proton Conducting Ceramic Pumps	University of South Carolina	Chen, Fanglin (Frank)	<ul style="list-style-type: none"> • Adams, Thad M. - Savannah River National Laboratory • Brinkman, Kyle - Savannah River National Laboratory • Reifsnider, Ken - University of South Carolina 	\$497,500
56	09-116	NGNP	Materials, Turbomachinery and Heat Exchangers for Supercritical CO2 Systems	University of Wisconsin, Madison	Anderson, Mark	<ul style="list-style-type: none"> • Allen, Todd - University of Wisconsin, Madison • Corradini, Michael - University of Wisconsin, Madison • Nellis, Greg - University of Wisconsin, Madison • Wright, Stephen - Sandia National Laboratory 	\$533,354

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57	09-202	NGNP	Experimental Studies of NGNP Reactor Cavity Cooling System with Water	University of Wisconsin, Madison	Corradini, Michael	<ul style="list-style-type: none"> • Anderson, Mark - University of Wisconsin, Madison • Hassan, Yassin - Texas A&M University • Tokuhiko, Akira - University of Idaho 	\$543,717
58	09-237	NGNP	Assessment of Embrittlement of VHTR Structural Alloys in Impure Helium Environments	University of Wisconsin, Madison	Crone, Wendy	<ul style="list-style-type: none"> • Allen, Todd - University of Wisconsin, Madison • Cao, Guoping - University of Wisconsin, Madison • Sridharan, Kumar - University of Wisconsin, Madison 	\$489,707
59	09-245	NGNP	Modeling Fission Product Sorption in Graphite Structures	University of Wisconsin, Madison	Szlufarska, Izabela	<ul style="list-style-type: none"> • Allen, Todd - University of Wisconsin, Madison • Morgan, Dane - University of Wisconsin, Madison 	\$479,944
60	09-274	NGNP	Liquid Salt Heat Exchanger Technology for VHTR Based Applications	University of Wisconsin, Madison	Anderson, Mark	<ul style="list-style-type: none"> • Allen, Todd - University of Wisconsin, Madison • Peterson, Per - University of California, Berkeley • Sridharan, Kumar - University of Wisconsin, Madison 	\$495,958
61	09-323	NGNP	Effect of Post-Weld Heat Treatment on Creep Rupture Properties of Grade 91 Steel Heavy Section Welds	Utah State University	Li, Leijun		\$397,417
62	09-081	IIR	Neutron Damage and MAX Phase Ternary Compounds	Drexel University	Barsoum, Michel	<ul style="list-style-type: none"> • Hoffman, Elizabeth - Savannah River National Laboratory • Kohse, Gordon - Massachusetts Institute of Technology • Sindelar, Robert - Savannah River National Laboratory 	\$664,359

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63	09-040	IIR	Maximum Fuel Utilization in Fast Reactors without Chemical Reprocessing	University of California, Berkeley	Greenspan, Ehud	• Vujic, Jasmina - University of California, Berkeley	\$367,709
64	09-456	IIR	Developing a High Thermal Conductivity Fuel with Silicon Carbide Additives	University of Florida	Baney, Ronald	• Tulenko, James - University of Florida	\$383,148
65	09-477	IIR	Fabrication of Tungsten-Rhenium Cladding Materials via Spark Plasma Sintering for Ultra High Temperature Reactor Applications	University of Idaho	Charit, Indrajit	• Butt, Darryl - Boise State University • Carroll, Mark - Idaho National Laboratory • Frary, Megan - Boise State University	\$682,258
66	09-537	IIR	Ionic Liquid and Supercritical Fluid Hyphenated Techniques for Dissolution and Separation of Lanthanides, Actinides, and Fission Products	University of Idaho	Wai, Chien	• Mincher, Bruce - Idaho National Laboratory	\$202,869
67	09-285	IIR	Utilization of Methacrylates and Polymer Matrices for the Synthesis of Ion Specific Resins	University of Nevada, Las Vegas	Czerwinski, Kenneth	• Rego, Daniel B. - University of Nevada, Las Vegas • Weck, Philippe - University of Nevada, Las Vegas	\$650,301
68	09-519	IIR	Improved LWR Cladding Performance by EPD Surface Modification Technique	University of Wisconsin, Madison	Corradini, Michael	• Anderson, Mark - University of Wisconsin, Madison • Sridharan, Kumar - University of Wisconsin, Madison	\$303,794
69	09-267	IIR	Atomistic Calculations of the Effect of Minor Actinides on Thermodynamic and Kinetic Properties of UO ₂ +x	Georgia Institute of Technology	Deo, Chaitanya	• Andersson, David - Los Alamos National Laboratory • Battaile, Corbett - Sandia National Laboratory • Uberuaga, Blas - Los Alamos National Laboratory	\$482,426

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70	09-414	IIR	Improved Fission Neutron Data Base for Active Interrogation of Actinides	University of Michigan	Pozzi, Sara	<ul style="list-style-type: none"> • Czirr, J. Bart - Photogenics • Haight, Robert - Los Alamos National Laboratory • Kovash, Michael - University of Kentucky • Tsvetkov, Pavel - Texas A&M University 	\$690,636
71	09-196	LWRS	Advanced Models of LWR Pressure Vessel Embrittlement for Low Flux-High Fluence Conditions	University of California, Santa Barbara	Odette, G. Robert	<ul style="list-style-type: none"> • Nanstad, Randy K. - Oak Ridge National Laboratory • Wirth, Brian D. - University of California, Berkeley • Yamamoto, Takuya - University of California, Santa Barbara 	\$397,500
Total							\$43,752,039

AFCI- Advanced Fuel Cycle Initiative

NGNP - Next Generation Nuclear Plant

IIR - Investigator-Initiated Research

LWRS - Light Water Reactor Sustainability

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