

DIMENSIONS *of* DISCOVERY

Sponsored Program Awards

September 2019

Abdel-Khalik to Buczkowski

Abdel-Khalik, Hany S; nuclear engineering, from Idaho National Laboratory, \$30,000, "Improvements of Algorithms for the Production of Prototypical Synthetic Time Histories."

Adeola, Olayiwola; animal sciences, from Genencor International, \$67,000, "Determine the Nutritional Matrix of a Phytase in Broilers."

Adeola, Olayiwola; animal sciences, from DSM Nutritional Products, Inc., \$59,667, "Evaluation of the Effect of a Carbohydrase Enzyme Combination on Broiler Nitrogen-Corrected Apparent Metabolizable Energy (AMEn)."

Aime, Mary Catherine; botany & plant pathology, from National Geographic Society, \$31,000, "A Citizen Science-Powered Mycoflora for North America?"

Alexeenko, Alina; aeronautics & astronautics, from Vestigo Aerospace, \$16,070, "Aerodynamically Stable DragSails for Spacecraft Deorbit."

Allebach, Jan P; Chiu, George T; Bolton, J Stuart and Davies, Patricia; electrical & computer engineering, mechanical engineering, from HP Inc, \$302,325, "Print Quality Improvement."

Allebach, Jan P; electrical & computer engineering, from Xerox Corp, \$15,000, "Qiulin Chen Internship - Applications of Computer Vision and Machine Learning to Image Quality."

Aref, Walid G and Rompf, Tiark; computer science, from National Science Foundation, \$499,461, "III: Small: Native Compilation, Query Processing, and Indexing for IN-Memory Graph Relational Data Systems."

Arling, Gregory W; nursing, from Department of Veterans Affairs, \$25,033, "Arling-IPA - Extension of Current IPA with Roubidoux VHA."

Bae, Euiwon; mechanical engineering, from Novilytic LLC, \$15,367, "Development of Portable Fluorometer."

Bae, Euiwon; mechanical engineering, from Novilytic LLC, \$2,528, "Development of Portable Fluorometer."

Bagchi, Saurabh; electrical & computer engineering, from Sandia National Laboratories, \$98,135, "Testing Embedded System Firmware through Fuzzing and Symbolic Execution; Revision 2; Grant 14000441."

Baributsa, Dieudonne; entomology, from Paige Ebner, \$42, "PICS Voluntary Support."

Baributsa, Dieudonne; entomology, from Paige Ebner, \$42, "PICS Voluntary Support."

Basaran, Osman A; chemical engineering, from Pfizer Inc, \$25,000, "Purdue Process Safety and Assurance Center(P2SAC)."

Beaulieu, Lionel J and Brunese, Priyanka Shah; Office of Engagement Administration, iSTEM, from Rural Development, \$69,000, "Zones: Advancing Business Development & Investments in Rural Indiana."

Berger, Edward J; engineering education, from National Science Foundation, \$223,397, "NSF IPA - Edward Berger."

Bhunja, Arun K; food science, from National Academy of Sciences, \$3,800, "Biofilm Inactivation Using Smart Antimicrobial Nanoparticle."

Bobet, Antonio; civil engineering, from Terracon Foundation, \$8,000, "Multi Sponsored Voluntary Support."

Bocanegra Evans, Humberto; mechanical engineering, from National Science Foundation, \$37,000, "Collaborative Research: Dynamics of Inertial Particles in Thermally-Stratified Flows within Electromagnetic Field."

Boltasseva, Alexandra; electrical & computer engineering, from Ministry for Science and Education of Russia, \$23,813, "PhD Student Visit by Pavel Terekhov." (a Discovery Park award – Birck Nanotechnology Center)

Bouman, Charles A; Buzzard, Gregory T; Chan, Stanley H and Simpson, Garth J; electrical & computer engineering, mathematics, chemistry, from National Science Foundation, \$600,000, "CIF: Medium: Multi-Agent Consensus Equilibrium: Modular Methods for Integrating Disparate Sources of Expertise."

Braun, James E and Horton, William Travis; mechanical engineering, civil engineering, from Northwest Energy Efficiency Alliance, \$40,000, "Load-Based Testing of Air Conditioning and Heat Pumping Equipment."

Brightman, Andrew O; biomedical engineering, from Indiana University Purdue University at Indianapolis, \$31,870, "NRSA Training Core." (a Discovery Park award – Bindley Bioscience Science)

Brouder, Sylvie M; Volenec, Jeffrey J; Bossaer, Gregory J; Craig, Bruce A; DeLay, Nathan D; Erickson, Bruce J; Thompson, Nathanael M and Walker, Danielle N; agronomy, agriculture administration, statistics, agriculture economics, libraries administration, from National Institute of Food & Agriculture, \$1,000,000, "FACT: An Innovative Cyber-Framework Integrating Public/Private Data for Evidence-Based Recommendations."

Buczkowski, Grzegorz A; entomology, from BASF Corporation, \$6,000, "Fendona CS for the Control of Ticks in Turf."

Buczkowski, Grzegorz A; entomology, from BASF Corporation, \$8,100, "Fendona CS for the Control of Grain Storage Pests."

Buhman to Dyke

Buhman, Kimberly K; nutrition science, from University of Toronto, \$13,500, “GLP-2 and Intestinal Lipid Metabolism.”

Bullock, Darcy M; civil engineering, from Indiana Department of Transportation, \$43,000, “Apt Capital Expenditure Account.”

Bullock, Darcy M; civil engineering, from Indiana Department of Transportation, \$177,122, “SPR-4431: A New Approach to Accelerated Fabrication of Steel Bridges: Design, and Demonstration.”

Bullock, Darcy M; civil engineering, from Indiana Department of Transportation, \$60,000, “Enhanced Traffic Signal Performance Measures (21000232).”

Cai, Hua and Gkritza, Konstantina; industrial engineering, civil engineering, from Indiana Department of Transportation, \$244,101, “Assessing the Economic, Safety, Transit and/or Travel Demand Impacts of Disruptive Transportation Technology to Indiana Department of Transportation (INDOT) - #4413.”

Caldwell, Barrett S; industrial engineering, from Federal Aviation Administration, \$74,531, “PEGASAS: Helicopter Operations Weather Information – Project 34.”

Calve, Sarah; biomedical engineering, from PHS-NIH National Institute of Arthritis and Musculoskeletal and Skin Diseases, \$354,459, “Biomechanical Influence of ECM Remodeling on the Developing Enthesis.”

Carlton, Joshua S and Hook, Tomas O; Indiana-Illinois Sea Grant, forestry & natural resources, from Iowa State University, \$75,000, “A NCRAC-Sea Grant Partnership for Regional Aquaculture Extension.”

Chan, Stanley H; electrical & computer engineering, from Intel Corporation, \$10,000, “Multi Sponsor - Voluntary Support.”

Chandrasekar, Srinivasan and Mohanty, Debapriya Pinaki; industrial engineering, from Saint Gobain Corporation, \$72,950, “Correlating Performance of Coated Abrasive Products with Chip Attributes.”

Christie, Mark R; biological sciences, from National Science Foundation, \$410,896, “Collaborative Research: Combined Spatial and Temporal Analyses of Population Connectivity During a Northern Range Expansion.”

Claridge, Shelley A; chemistry, from 3M General Offices, \$15,000, “Multi Sponsor Voluntary Support.”

Cleveland, William S; Crabill, Douglas G; Song, Qifan; Wang, Xiao and Xi, Bowei; statistics, from Air Force Research Laboratory, \$203,354, “Diagnostic Methods & Software for Gitted Model Checking.”

Connor, Robert J; civil engineering, from Indiana Department of Transportation, \$30,000, “Steel Bridge Research, Inspection, Training and Education Engineering Center (S- BRITE).”

Connor, Robert J; civil engineering, from Indiana Department of Transportation, \$40,000, “Development of Criteria to Assess the Effects of Pack-Out Corrosion in Built-Up Steel Members (21000270).”

Connor, Robert J; civil engineering, from Indiana Department of Transportation, \$75,000, “Development of an Integrated Unmanned Aerial Systems (UAS) Validation Center.”

Cooks, Robert Graham and Shi, Riya; chemistry, basic medicine science, from PURSPEC Technologies, \$106,657, “Development of a Miniatre Mass Spectrometry System for Point-of-Care Applications.”

Cooper, Bruce R; Aryal, Uma K and Ferreira, Christina R; comparative pathobiology, medicinal chemistry & molecular pharmacy, from PHS-NIH Office of the Director, \$600,000, “High Resolution Mass Spectrometry Platform for Tissue Chemical Imaging and Ion Mobility Capability for Multi-Center Translational Research.” (a Discovery Park award – Bindley Bioscience Center)

Corley, Baraka B; student success, from U.S. Department of Education, \$423,619, “Horizons Student Support Services.”

Crossley, William A; aeronautics & astronautics, from Federal Aviation Administration, \$22,000, “PEGASAS Project No. 25 - General Aviation 2030 - GA Exploratory Analyses – Phase 3.”

Dahl, Bernie L; horticulture and landscape architecture, from Jesse Kiste, \$300, “Wine Grape Program.”

Deering, Amanda J; food science, from Whole Cell Bread LLC, \$500, “Multi Sponsored Gift Account.”

Deering, Amanda J; food science, from Indiana State Department of Health, \$158,950, “State and Territory Cooperative Agreement to Enhance Produce Safety in Preparation of Implementation of FDAs Rule: Standards for the Growing, Harvesting, Packing, & Holding of Produce for Human Consumption.”

Delp, Edward J and Comer, Mary L; electrical & computer engineering, from Lockheed Martin Corp., \$42,000, “Multi-Entity Activity Characterization.”

Diclementi, Jeannie D; psychology, from Substance Abuse, Mental Health Services Administration, \$122,448, “Purdue Aware: Helping Our Students through Faculty and Staff Training.”

Dilkes, Brian; biochemistry, from National Science Foundation, \$73,675, “Collaborative Research: Root-to-Shoot Communication via the BPS Signal.”

Doucette, Suzanne C; chemistry, from Florida State University, \$107,989, “Energy Frontier Research Center: Center for Interdisciplinary Actinide Science.”

Doudareva, Natalia; biochemistry, from Binational Agricultural Research & Development, \$155,000, “Enhancement of Tomato Flavor by Upregulating the Mono- and Sesquiterpene Biosynthetic Pathways Using Genes from Wild Tomato Relatives.”

Dyke, Shirley J; Braun, James E; Marais, Karen; Bilonis, Ilias; Bobet, Antonio; Cappelleri, David J; Chiu, George T; Maghareh, Amin; Whitaker, Dawn R and Ramirez, Julio Alfonso; civil engineering, mechanical engineering, aeronautics & astronautics, industrial engineering, from National Aeronautics and Space Administration, \$500,000, “Resilient Extraterrestrial Habitats.”

Dyke, Shirley J; Braun, James E; Marais, Karen; Bilonis, Ilias; Bobet, Antonio; Cappelleri, David J; Chiu, George T; Maghareh, Amin; Whitaker, Dawn R and Ramirez, Julio Alfonso; civil engineering, mechanical engineering, aeronautics & astronautics, industrial engineering, from National Aeronautics and Space Administration, \$2,000,000, “Resilient Extraterrestrial Habitats.”

Esters to Hall

Esters, Levon T and **Knobloch, Neil A**; agriculture sciences education & communication, from National Science Foundation, \$399,160, "Strategies: Enhancing Minority Middle School Student Knowledge, Literacy, and Motivation in Science, Technology, Engineering & Mathematics (STEM) Using Contextualized Life Science Learning Experiences."

Evans, Janice Perry; biological sciences, from PHS-NIH National Institute of Child Health and Human Development, \$77,500, "Novel Reverse Genetics Approach to Probe Cytoskeletal Functions in Mammalian Oocytes."

Farkas, Brian E; food science, from Howe Farms LLC, \$125, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Otto Richard or Pat Leis, \$75, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Land Locked Hops Inc, \$250, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from High Bines Hop Yard LLC, \$125, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Brent Strickhouser, \$50, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Samuel J Compton-Craig, \$50, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Daniel A or Diane J Smith, \$140, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Matthew T & Keriane Ross, \$50, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Jared & Annette Coppess, \$250, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Joshua or Daffney Sommerman, \$50, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Greenhat Biosystems, LLC, \$64, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Otto Richard or Pat Leis, \$25, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Land Locked Hops Inc, \$200, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Peter L Oren, \$50, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Peter L Oren, \$50, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Peter L Oren, \$85, "Multi Sponsored Gift Fermentation."

Farkas, Brian E; food science, from Robert & Tamara Pringle, \$70, "Multi Sponsored Gift Fermentation."

Felluga, Dino F; English, from The University of Birmingham, \$2,736, "PRO: the Pre-Raphaelites Online."

Fentiman, Audeen W; **DeLaurentis, Daniel A**; **Douglas, Kerrie A** and **Sutherland, John W**; engineering education, aeronautics & astronautics, environmental & ecological engineering, from National Science Foundation, \$1,989,709, "Development, Deployment, and Evaluation of Instructional Modules for Current and Future Practitioners of Model-Based Systems Engineering."

Flaherty, Elizabeth A; forestry & natural resources, from Indiana Department of Natural Resources, \$2,160, "Monitoring Mussel Health Using Stable Isotope Analysis."

Foster, Ricky E; field extension agents, from Indiana Soybean Alliance, \$3, "Data Analysis for in Field Advantage - Increase."

Frueh, Carolin E; aeronautics & astronautics, from Air Force Office of Scientific Research, \$89,102, "Ironcastle - Interpretation and Recognition of Objects Using Novel Coupled Attitude and Shape Techniques for Lightcurve Evaluation."

Gallant, Kathleen Hill; nutrition science, from Indiana University, \$1,000, "Clinical and Translational Sciences Institute (CTSI) Annual Meeting."

Garrison, James L; aeronautics & astronautics, from National Aeronautics and Space Administration, \$94,668, "Assimilation of Global Navigation Satellite System (GNSS)-R Delay-Doppler Maps into Hurricane Models."

Goldenstein, Christopher S; mechanical engineering, from Defense Threat Reduction Agency, \$49,698, "Wavelength-Modulation Absorption Spectroscopy for MHz Thermometry & Species Sensing in Optically Dense Fireballs."

Gounder, Rajamani P; chemical engineering, from National Science Foundation, \$700,000, "DMREF: Collaborative Research: Grant Opportunities for Academic Liaison with Industry (GOALI): Multi-scale Design of Zeolite Sites for Precise Catalytic Transformations."

Greeley, Jeffrey P; chemical engineering, from National Science Foundation, \$252,856, "Collaborative Research: Engineering the Chemistry at Solid-Solid Interfaces of Li-O₂ Battery Cathodes."

Greeley, Jeffrey P and **Miller, Jeffrey T**; chemical engineering, from U.S. Department of Energy, \$499,965, "Data Science-Driven Discovery of Multimetallic Oxygen-Cycle Electrocatalysts for Enhanced Energy Conversion."

Groll, Eckhard A and **Ziviani, Davide**; education administration, mechanical engineering, from Bechtel Corporation, \$67,422, "Optimization of a CO₂ Ejector-Expansion Technology."

Guadarrama, Kelsey A; **Richey, Karen Louise** and **Gorka, Yolanda**; field extension, nutrition science, from Marshall Cty REMC Comm Fund, \$1,500, "Strengthening Families."

Guan, Wenjing; horticulture and landscape architecture, from Nunhems Seed Corporation, \$1,050, "General Research Activities."

Gupta, Sumeet Kumar and **Raghuathan, Anand**; electrical & computer engineering, from Army Research Office, \$56,231, "Low Power Compact Non-Volatile Memory and In-Memory Compute Architectures Enabled by 2D Piezoelectric Transistors."

Habib, Ayman F and **Bullock, Darcy M**; civil engineering, from Indiana Department of Transportation, \$188,071, "SPR#4407 - Roadway Ditch Line Mapping with Mobile Lidar."

Hall, Beth Lynelle; agronomy, from University of Illinois at Chicago, \$14,178, "Investigating the Role of Perceptions About Drought Information and Forecast Accuracy in Midwest Rain-Fed Agricultural Decision Making."

Hamaker to Kladvko

Hamaker, Bruce R; food science, from California Institute of Technology, \$191,567, “Targeting Diet-Microbiome Interactions in the Pathogenesis of Parkinsons Disease.”

Hamaker, Bruce R; food science, from Kansas State University, \$97,125, “Expanding Markets for Sorghum and Millet Farmers in West Africa through Strengthening of Women and Youth Processors and Nutrition-Based Promotion of Products.”

Hamilton, Roy L and Rainey, Maceo M; Education Opportunities Program, from U.S. Department of Education, \$363,938, “Educational Talent Search Program (Westville Campus).”

Harbin, Sherry L; biomedical engineering, from PHS-NIH National Institute of Diabetes and Digestive and Kidney Diseases, \$173,272, “Interdisciplinary Bioengineeringtraining for Diabetes Research.”

Harris, Jason T and Bean, Robert S; health sciences, nuclear engineering, from Pacific Northwest National Laboratory, \$82,263, “NSE Radiological Security Online Development at Purdue University.”

Heister, Stephen D; aeronautics & astronautics, from Air Force Office of Scientific Research, \$50,000, “Rotating Detonation Engine (RDE) Comubustion for Rocket Applications.”

Hendrix, Gena K; comparative pathobiology, from Indiana Department of Natural Resources, \$30,000, “IDNR Wildlife Diagnostic Testing.”

Hertel, Thomas W; agriculture economics, from Economic Research Institute for ASEAN, \$20,435, “Global Trade Analysis Project (GTAP) Consortium.”

Hertel, Thomas W; agriculture economics, from Rieti (Research Institute of Economy, Trade and Industry, \$20,435, “Global Trade Analysis Project (GTAP) Consortium (RIETI).”

Hertel, Thomas W; agriculture economics, from Economic and Social Research Institute, \$20,435, “Global Trade Analysis Project (GTAP) Consortium (ESRI).”

Hess, Justin L; engineering education, from Indiana University, \$18,668, “Institutional Transformation: Enhancing Indiana University Purdue University at Indianapolis (IUPUI) Science, Technology, Engineering & Mathematics (STEM) Curriculum through I-CELER.”

Hill, Michael A; Center for Environmental and Regulatory Information Systems, from National Institute of Food & Agriculture, \$234,635, “National Plant Diagnostic Network (NPDN) National Database / National Network of Diagnostic Centers.”

Hill, Michael A; Center for Environmental and Regulatory Information Systems, from Animal Plant Health Inspection Service, \$21,252, “Indiana FY 19 Notify Specialty Crops.”

Holloway, Elizabeth M; education administration, from National Science Foundation, \$49,999, “Creating Cultures of Inclusion in Engineering.”

Hook, Tomas O; Pijanowski, Bryan C and Salazar, Kara A; forestry & natural resources, Indiana-Illinois Sea Grant, from National Oceanographic & Atmospheric Administration, \$218,531, “Using Existing Data and Models Deployed through Tipping Point Planner to Support Lamp and Community Planning Decisions.”

Horgan, Briony H; earth, atmospheric and planetary sciences, from National Aeronautics and Space Administration, \$45,000, “Investigating the Origin of Sediments within the Polar Layered Deposits of Mars – Fellowship for Prakhar Sinha.”

Horgan, Briony H; earth, atmospheric and planetary sciences, from Jet Propulsion Laboratory, \$64,570, “Using Composition to Constrain Paleoenvironments and Sites of Organic Preservation in Gale Crater; Modification 9; Grant 12000172.”

Hosseini, Mahdi; electrical & computer engineering, from Air Force Office of Scientific Research, \$150,713, “Coherent Atom-Optomechanic Interface for Precision Sensing and Quantum Information.”

Howell, Kathleen; aeronautics & astronautics, from National Aeronautics and Space Administration, \$78,752, “Autonomous Spacecraft Trajectory Design via Reinforcement Learning – Fellowship for Nicholas LaFarge.”

Hudmon, Karen S; pharmaceutical practice, from Indiana State Department of Health, \$250,000, “Rethink Tobacco Indiana: Addressing Tobacco Use in Behavioral Health Populations.”

Hwang, Inseok; Pitts, Brandon J; Reid, Tahira and Sundaram, Neera J; aeronautics & astronautics, industrial engineering, mechanical engineering, from National Science Foundation, \$895,372, “CPS: Frontier: Collaborative Research: Cognitive Autonomy for Human CPS: Turning Novices into Experts.”

Hwang, Inseok; aeronautics & astronautics, from Rockwell Collins, \$75,000, “Development of a Reinforcement Learning Controller with Provable Control-Theoretic Stability Guarantees.”

Jiao, Dan; electrical & computer engineering, from Intel Corporation, \$100,000, “Signal Integrity Analysis of Nonlinear I/O Circuits.”

Jin, Jian; agriculture & biological engineering program, from Sumitomo Chemical Company, \$760,878, “Greenhouse Plant Phenotyping for Detecting Physiological and Morphological Changes.”

Johnson, William G and Young, Bryan G; botany & plant pathology, from United Soybean Board, \$328,789, “Take Action - Multi State Herbicide Resistant Crops and Weeds Educational Program.”

Johnson, William G; botany & plant pathology, from Monsanto Company, \$10,000, “Weed Science Research Voluntary Support.”

Kasinski, Andrea L; biological sciences, from PHS-NIH National Cancer Institute, \$43,760, “Ligand-Mediated, Vehicle-Free Delivery of Small RNAs - Supplement.”

Kever, Shubitha S; Trio programs, from U.S. Department of Education, \$253,032, “Trio Student Support Services at PFW 2019 - 2020.”

Kihara, Daisuke; biological sciences, from Virginia Technology, \$47,095, “Integrative Genomics Approach to Computational Assessment of Threats (IGACAT).”

Kilaz, Gozdem; engineering technology, from Federal Aviation Administration, \$8,206, “Final Report for Federal Aviation Administration (FAA) ARFF on PEGASAS Projects 13 and 26.”

Kim, Seungjin; Harris, Jason T and Revankar, Shripad T; nuclear engineering, health sciences, from Nuclear Regulatory Commission, \$200,000, “Nuclear Engineering & Health Sciences Scholarship Program at Purdue University.”

Kim, Seungjin; Harris, Jason T and Revankar, Shripad T; nuclear engineering, health sciences, from Nuclear Regulatory Commission, \$400,000, “Nuclear Science and Engineering Fellowship Program at Purdue University.”

Kladvko, Eileen J and Rorick, Joseph D; agronomy, from Indiana Association of Soil & Water Conservation Districts, \$88,999, “Conservation Agronomist.”

Klimeck to Mishra

Klimeck, Gerhard; electrical & computer engineering, from Harvard University, \$100,000, "QII-TAQS: Majorana Nanomanipulation for Topological Quantum Computing." (a Discovery Park award – Network for Computational Nanotechnology)

Klimeck, Gerhard; Strachan, Alejandro H and Zentner, Lynn K; electrical & computer engineering, materials engineering, from National Science Foundation, \$800,000, "Network for Computational Nanotechnology - Cyber Platform."

Kossek, Ellen E and Lee, Kyung Hee; management, organizational behavior & human resources, from National Science Foundation, \$335,060, "Faculty Work-Life Boundary Management, Inclusion, and Womens Career Well-Being in the Always-on Workplace: A National Survey and Field Experiment."

Kuang, Shihuan; animal sciences, from University of Kentucky, \$81,867, "University of Kentucky Support for X. Liu Students."

Kung, Yk Hei Franki; psychological sciences, from Negotiation & Team Resources, \$8,162, "From Negotiating Identities to Negotiating a Deal: Identity Integration, (Non-)Zero-Sum Mindset, and Success in Integrative Negotiation."

Ladisch, Michael R; Wassgren, Carl R; Ambrose, Rose Prabin Kingsly; Engelberth, Abigail S; Erk, Kendra A; Gonzalez, Marcial; Ileleji, Klein; Mosier, Nathan S; Sharma, Pankaj and Ximenes, Eduardo A; agriculture & biological engineering program, mechanical engineering, materials engineering, engineering technology, from U.S. Department of Energy, \$789, "Analytical Modeling of Biomass Transport and Feeding Systems."

Lechtenberg, Victor Louis; president administration, from Indiana University, \$10,000, "Support of Southeastern Small Business Development Center (SBDC)."

Lee, Linda S; agronomy, from Environmental Protection Agency, \$899,976, "Decreasing Polyfluoroalkyl Substances (PFAS) in Municipal Wastewater Effluent and Release from Land-Applied Biosolids."

Lee, Linda S; Sepulveda, Maria Soledad and Ma, Zhao; agronomy, forestry & natural resources, from National Academy of Sciences, \$42,643, "Endocrine Disrupting Chemicals (EDCS) in Kabul and Swat Rivers and Their Impact on Fish Populations and Rural Community Livelihoods."

Lee, Sunghwan; engineering technology, from National Science Foundation, \$84,088, "P-Type Oxides for CMOS Devices: Thermodynamics-Based In-Situ Synthesis and In-Situ Integration."

Li, Ninghui; Blocki, Jeremiah M and Proctor, Robert W; computer science, psychological sciences, from National Science Foundation, \$343,110, "SaTC: CORE: Medium: Collaborative: User-Centered Deployment of Differential Privacy."

Liceaga, Andrea M; food science, from Impossible Foods Inc., \$2,500, "Multi Sponsored Gift – Sensory."

Liceaga, Andrea M; food science, from Naoki Sugita, \$1,650, "Multi Sponsored Gift – Sensory."

Liceaga, Andrea M; food science, from Impossible Foods Inc., \$5,000, "Multi Sponsored Gift – Sensory."

Liceaga, Andrea M; food science, from Weaver Popcorn Company, \$3,000, "Multi Sponsored Gift – Sensory."

Low, Philip S; chemistry, from PHS-NIH National Institute of General Medical Science, \$448,996, "Regulation of Erythrocyte Function."

Lu, Na; civil engineering, from Specification Products, \$598,506, "Developing Fundamental Understanding of High Performance Nano-Silica Admixtures on Concrete Curing Effect."

Lynall, Matthew D; management, from National Science Foundation, \$80,000, "Type II: Purdue University I-Corps Site."

Mansson, Jan-Anders E and Dustin, Joshua S; chemical engineering, Composites Manufacturing and Simulation Center, from Specialized Bicycle Components, Inc, \$160,854, "Low Cost Fork."

Mathew, Alan G; animal sciences, from Agricultural Research Service, \$26,983, "Acquisition of Goods and Services."

Mauer, Lisa J; Aime, Mary Catherine; Allebach, Jan P; Applegate, Bruce M; Bae, Euiwon; Bhunia, Arun K; Chiu, George T; Deering, Amanda J; Mousoulis, Charilaos; Oliver, Haley F; Peroulis, Dimitrios; Pruitt, Robert E; Rajwa, Bartlomiej P; Robinson, Joseph Paul and Stanciu-Gregory, Lia A; food science, botany & plant pathology, electrical & computer engineering, mechanical engineering, education administration, basic medicine science, materials engineering, from Agricultural Research Service, \$612,329, "Advanced Development of Innovative Technologies and Systematic Approaches."

Maybee, Clarence D; Flierl, Michael R and Fundator, Rachel K; libraries administration, from Institute of Museum and Library Services, \$249,179, "Academic Librarian Curriculum Developers: Building Capacity to Integrate Information Literacy Across the University."

McKee, Renee K and McKinley, Steven K; field extension agents, field extension – 4h, from National Institute of Food & Agriculture, \$700,000, "Military Extension Adventure Camps."

McKee, Renee K and Stierwalt, Courtney Renea; field extension – 4h, from Indiana State Department of Health, \$23,280, "Strengthen Public Health Systems and Services."

Mei, Jianguo; chemistry, from Ambilight, Inc, \$365,945, "Scalable Synthesis of Electroactive Polymers and Fabrication of Their Thin Films."

Merwade, Venkatesh Mohan and Tiwari, Alka; civil engineering, from National Aeronautics and Space Administration, \$45,000, "Improving Post-Hurricane Flood Modeling Utilizing Recent Satellite Products.."

Merwade, Venkatesh Mohan; civil engineering, from Indiana Department of Transportation, \$173,432, "#4430 - Multiple Water Course Joint Probability Analysis Procedure Development for Indiana Specific Watersheds."

Meyer, Terrence R and Son, Steven F; mechanical engineering, from Spectral Energies, LLC, \$45,956, "High-Fidelity Diagnostics of Aerosols and Vapors at High Temperatures and Pressures."

Miller, Jeffrey T; chemical engineering, from Argonne National Laboratory, \$10,000, "Catalyst Characterization to Support Catalyst Development for Converting Biomass."

Mishra, Dharmendra K and Kurdalak, Erik S; food science, from PHS-Food and Drug Administration, \$169,800, "Training and Pilot Processing Laboratory Services for Food Processing Technology Courses; Modification 1; Grant 11000839."

Mitchell to Ramani

Mitchell, Cary A; horticulture and landscape architecture, from Kennedy Space Center, \$8,400, “Pick-and-Eat Salad-Crop Productivity, Nutritional Value, and Acceptability to Supplement the ISS Food System.”

Mohammadi, Mohsen; agronomy, from Agricultural Research Service, \$116,160, “Developing Methods for More Efficient Wheat Transformation.”

Mohammadi, Mohsen and Schemerhorn, Brandon J; agronomy, entomology, from Agricultural Research Service, \$60,134, “Hessian Fly-Resistance in Wheat.”

Morita-Mullaney, Patricia M; Chiu, Ming Ming and Wright, Wayne E; curriculum & instruction, educational studies, from U.S. Department of Education, \$432,493, “Project Puede: Parent and Professional Understanding for Equity in Dual Language Education.”

Morita-Mullaney, Patricia M; curriculum & instruction, from U.S. Department of Education, \$397,251, “Leveraging the Lectura Y Lenguaje: a Collaborative Scale Up of Literacy and Language in Indiana Schools.”

Mosier, Nathan S; agriculture & biological engineering program, from Indiana Soybean Alliance, \$117,932, “Purdue Student Soybean Innovation Contest.”

Mukherjee, Partha P; mechanical engineering, from Sandia National Laboratories, \$70,000, “Credible Computational Meshes from Ill-Defined Geometries Using Deep Machine Learning.”

Mukherjee, Partha P; mechanical engineering, from Texas Instruments, Inc., \$80,000, “Li-Ion Cell Cycle Life & Safety Research.”

Niazi, Fawad S; civil & mechanical engineering, from USUCGER, \$5,000, “Construction of a Multipurpose Apparatus for In-Class Demonstration of the Response of Saturated and Unsaturated Geomaterials to Static, Impact, Cyclic and Vibratory Loadings.”

Nielsen, Robert L; agronomy, from Furlong-Fox, \$500, “Corn & Soybean Production.”

Niyaz, Quamar; electrical & computer engineering, from Beulahworks LLC, \$8,445, “Malicious URL Detection on Distributed Framework PNW ECE Department & Beulah Works Collaboration.”

Noinaj, Nicholas; biological sciences, from Georgia State University, \$116,250, “Neisseria Gonorrhoeae Metal Transporters that Subvert Nutritional Immunity.”

Nolte, David D and Turek, John J; physics & astronomy, basic medicine science, from National Science Foundation, \$510,413, “Biodynamic Imaging of Drug Resistance in Living Tissue.”

Nowack, Robert L; earth, atmospheric & planetary sciences, from National Science Foundation, \$98,580, “Autocorrelation of Seismic Ambient Noise and P-Wave Coda for Crustal Structure.”

O'Donnell, Michael J; field extension, from The Land Connection, \$1,500, “Organic Agronomy Training Series.”

O'Haire, Marguerite E; Kelleher, Bridgette L and Rispoli, Mandy J; comparative pathobiology, psychological sciences, educational studies, from Human Animal Bond Research Institute, \$85,493, “Evaluating the Effects of Service Dogs on Children with Autism Spectrum Disorder (ASD) and Their Caregivers.”

Ostaneck, Jason K; engineering technology, from Citizens Energy Group, \$57,000, “Model Development to Predict Natural Air Circulation in the Digindy Tunnel.”

Panchal, Jitesh H; mechanical engineering, from Stevens Institute of Technology, \$124,849, “Cognitive Bias in Intelligent Systems.”

Paniagua Perez, Guillermo; mechanical engineering, from DNI Binational Science Foundation, \$29,700, “Energetic Modulation of the Thermal Boundary Layer Evolution.”

Patton, Aaron J; horticulture and landscape architecture, from BASF Corporation, \$7,579, “BASF New Chemistry for Weed Control in Turfgrass.”

Patton, Aaron J; horticulture and landscape architecture, from BASF Corporation, \$4,000, “Patton Multi Sponsored #2 (Orig 301226).”

Patton, Aaron J; horticulture and landscape architecture, from United States Golf Association, \$4,000, “Patton Multi Sponsored #2 (Orig 301226).”

Patton, Aaron J; horticulture and landscape architecture, from Syngenta Animal Nutrition Inc, \$3,600, “Patton Multi Sponsored #2 (Orig 301226).”

Pekny, Joseph F and Holloway, Eric A; chemical engineering, education administration, from Pioneer Oil Company, \$500,435, “Funding for Deliberate Innovation, Nathan Schultheiss.”

Pourpoint, Timothee L; aeronautics & astronautics, from National Aeronautics and Space Administration, \$75,000, “Physical and Thermodynamic Properties of Mixed Oxides of Nitrogen.”

Povolotskyi, Mykhailo; electrical & computer engineering, from First Solar Inc, \$178,093, “Phase II: Modelling of CdTe Photovoltaic Elements (40002711).” (a Discovery Park award – Birck Nanotechnology Center)

Qu, Ming; civil engineering, from Oak Ridge National Laboratory, \$45,000, “Develop a Software Tool for Feasibility of the Geothermal Heat Pump and Thermal Storage.”

Ragland, Darryl and Pogranichniy, Roman M; veterinary clinical sciences, comparative pathobiology, from Animal Plant Health Inspection Service, \$152,281, “African Swine Fever for First Responders in the Asia Region – Training.”

Rainey, Katherine Martin; agronomy, from Agricultural Research Service, \$7,425, “Acquisition of Goods and Services.”

Rainey, Katherine Martin; agronomy, from United Soybean Board, \$705,528, “Modifying Soluble Carbohydrates in Soybean Seed for Enhanced Nutritional Energy Meal.”

Rakita, Milan and Han, Qingyou; engineering technology, from Fiat Chrysler Automobiles, \$173,970, “Cryogenic Machining for Increased Tool Life and Quality of Machined Surfaces of Aluminum Alloys and Steels.”

Ramani, Karthik; Ebert, David S; Redick, Thomas S; Zhang, Song and Iyer, Ananth V; mechanical engineering, electrical & computer engineering, psychological sciences, department of management, from National Science Foundation, \$1,000,000, “RAISE: C-Accel Pilot - Track B1 (Future Jobs and AI): Collaborative Research: Skill-LeARn: Affordable Augmented Reality Platform for Scaling Up Manufacturing Workforce, Skilling, and Education.”

Ramirez to Swithers

Ramirez, Julio Alfonso and **Ileleji, Klein**; civil engineering, agriculture & biological engineering program, from Colciencias, \$16,000, “Colciencias Assistantship Pablo Vega.”

Ramkrishna, Doraiswami; chemical engineering, from Abbvie Inc, \$40,000, “Modeling of Crystal Morphology and Polymorphs.”

Rapoport, Anatoli; curriculum & instruction, from U.S. Department of State, \$330,000, “Benjamin Franklin Transatlantic Fellows Summer Institute 2020.”

Rathfon, Ronald A; forestry & natural resources, from Bayer Corporation, \$4,000, “Bayer Vol Support.”

Remis, Melissa J and **Schulze, Savannah M**; anthropology, from National Geographic Society, \$7,894, “Anthropological Approaches to Critical Collaborative Engagement and Cultural Tourism in a Ugandan National Park.”

Ribeiro, Fabio H; chemical engineering, from Hindustan Petroleum Corp Ltd, \$30,000, “CISTAR Industrial Consortium (40001938).”

Ribeiro, Fabio H; **Agrawal, Rakesh**; **Gounder, Rajamani P**; **Greeley, Jeffrey P**; **Miller, Jeffrey T**; **Sirola, Jeffrey J** and **Delgass, W Nicholas**; chemical engineering, from National Science Foundation, \$4,000,000, “Engineering Research Center for Innovative and Strategic Transformation of Alkane Resources - CISTAR - Year 3.”

Richert, Brian T; animal sciences, from Administration Animal Nutrition, \$3,500, “Swine Research.”

Richmond, Douglas Scott; entomology, from Syngenta Crop Protection Inc., \$5,500, “ISM-555: Evaluation of 200SC for Control of Billbugs in Turf.”

Rodriguez, Catalina E; Education Opportunities Program, from U.S. Department of Education, \$333,429, “Student Support Services (Year 5).”

Rogers, Timothy G; electrical & computer engineering, from University of Michigan, \$36,000, “Applications Driving Architectures (Ada) Center - Leveraging Software Engineering Design Principals to Generate Efficient Hardware.”

Rogers, Timothy G; electrical & computer engineering, from Sandia National Laboratories, \$105,000, “GPGPU Simulation Studies.”

Roy, Kaushik; electrical & computer engineering, from University of Pennsylvania, \$150,000, “New Phase Change Materials for Photonics: from IN-Silico Design to Novel Device Concepts.”

Ruple, Audrey; public health, from University of Washington, \$24,421, “The Dog Aging Project: Genetic and Environmental Determinants of Healthy Aging in Companion Dogs (Year 2 Funds).”

Sandhage, Kenneth H and **Trumble, Kevin P**; materials engineering, from U.S. Department of Energy, \$999,937, “Robust High-Temperature Heat Exchangers.”

Sanmiguel, Sandra F; **Burgess, Wilella Daniels**; **Green, Henry W**; **Reed, Willie M** and **Zenor, Bianca N**; veterinary medicine administration, Evaluation and Learning Research Center, veterinary clinical sciences, business office, veterinary technology, from Health Resources & Services Administration, \$644,701, “Veterinary Up! the National HCOP Academy for Veterinary Medicine.”

Schoonmaker, Jon; animal sciences, from Mootral SA, \$85,000, “Effect of Mootral on Ruminant Fermentation, Methane Emissions, Growth, and Carcass Characteristics of Feedlot Steers Fed a Range of Diets Differing in Forage: Concentrate.”

Seigfried-Spellar, Kathryn C and **Rogers, Marcus K**; computer information technology, from National Institute of Justice, \$105,120, “NIJ Research Assistantship Program: Digital Forensics and Multimedia Analysis.”

Semperlotti, Fabio; mechanical engineering, from U.S. Department of Interior, \$246,465, “A Variable and Multi-Fractional Order Computational Mechanics Framework: Simulation, Optimization, and Monitoring of Hypersonic Structures in a Multiphysics Environment.”

Sen, Shreyas and **Ward, Matthew Peter**; electrical & computer engineering, biomedical engineering, from Indiana Clinical & Translational Science Institute, \$100,000, “An Ingestible Radar System for Real-Time Gastric Accommodation and Motility Measurement.”

Sepulveda, Maria Soledad; forestry & natural resources, from Department of the Army, \$100,000, “Development of Amphibian Poly- and Perfluoroalkyl Substances Toxicity Reference Values for Use in Ecological Risk Assessment at Aqueous Film Forming Foam Sites.”

Shakouri, Ali; electrical & computer engineering, from Landauer, \$35,000, “Consortium on Printing and Scalable Manufacturing of Aware and Responsive Thin Films (SMART) (Landauer Inc).” (a Discovery Park award – Birck Nanotechnology Technology)

Shalaev, Vladimir M; **Boltasseva, Alexandra** and **Kildishev, Alexander V**; electrical & computer engineering, from Air Force Office of Scientific Research, \$15,000, “Space-Time Photonic Metamaterials: from Design and Materials to Device Concepts.” (a Discovery Park award – Birck Nanotechnology Technology)

Sheehan, Amy Heck; pharmaceutical practice, from PHS-Food and Drug Administration, \$40,000, “(IPA) Assignment Agreement for Regulatory Pharmaceutical Fellowship – Jennifer Chen.”

Sheehan, Amy Heck; pharmaceutical practice, from PHS-Food and Drug Administration, \$40,000, “Intergovernmental Personnel Assignment (IPA) Assignment Agreement for Regulatory Pharmaceutical Fellowship – Tri Tran.”

Shih, Tom I-P; aeronautics & astronautics, from Ames Laboratory, \$155,576, “Computational Analysis of Advanced Cooling Strategies for High-Efficiency and Long-Service Life Turbines.”

Slabaugh, Carson D; aeronautics & astronautics, from National Aeronautics and Space Administration, \$32,000, “Propulsion Design, Build, Test: Hydrocarbon Propellant Delivery System.”

Stahelin, Robert V; medicinal chemistry & molecular pharmacy, from PHS-NIH National Institute of Allergy and Infectious Diseases, \$344,618, “Lipid-Protein Interactions in Viral Assembly and Virus Like Particle Formation.”

Swithers, Susan E; psychological sciences, from PHS-NIH National Institute of Child Health and Human Development, \$6,000, “Annual Meeting of the International Society for Developmental Psychobiology.”

Tan to Won

Tan, Lin; computer science, from National Science Foundation, \$222,634, “Software and Hardware Foundations (SHF): Medium: Principled Co-Reasoning of Software and Natural-Language Artifacts.”

Tao, Weiguo Andy; biochemistry, from Tymora Analytical Operations, LLC, \$50,000, “Novel Microarray Platform for High-Throughput Analysis of Cancer Biomarkers.”

Telenko, Darcy E P; botany & plant pathology, from Agricultural Research Service, \$14,520, “Managing Frogeye Leaf Spot of Soybean in the Midwest.”

Titus, Michael S; materials engineering, from Haynes International, \$40,000, “Multi Sponsor Voluntary Support.”

Tormoehlen, Roger L and **Field, William E**; agriculture & biological engineering program, from National Institute of Food & Agriculture, \$100,000, “YFSEC Instructor Training Project.”

Torres Bravo, Ariana P; agriculture economics, from Agricultural Research Service, \$29,070, “Strategies and Technologies to Optimize Resources in Controlled Environment Agriculture.”

Trader, Darci J; medicinal chemistry & molecular pharmacy, from PHS-NIH National Institute of General Medical Science, \$232,500, “Development of Activity-Based Chemical Reporters to Differentiate Proteasome Isoforms in Cells.”

Upadhyaya, Pramey; electrical & computer engineering, from University of California-Los Angeles, \$134,550, “Superfluid-Inspired Reconfigurable Magnetic Devices.”

Vacca, Andrea; agriculture & biological engineering program, from CNH America LLC, \$4,416, “Noise Measurements for a Dual Gear Pump for Agricultural Tractors.”

Vacca, Andrea and **Sudhoff, Scott D**; agriculture & biological engineering program, electrical & computer engineering, from U.S. Department of Energy, \$591,497, “Individual Electro-Hydraulic Drives for Off-Road Vehicles -”

Vacca, Andrea; agriculture & biological engineering program, from CNH - Hydraulic Competency Center, \$392,594, “Rational Design of the Hydraulic Circuit of Agricultural Tractors Considering the Implement Functions.”

Varala, Kranthi K and **Li, Ying**; horticulture & landscape architecture, from U.S. Department of Energy, \$404,456, “InferNet: Gene Function Inference by Leveraging Large, Organ-Specific Expression Datasets and Validation of Non-Redundant Regulators.”

Varma, Amit H and **Seo, Jungil**; civil engineering, from Charles Pankow Foundation, \$332,000, “Seismic and Wind Behavior and Design of Coupled CF-CPSW Core Walls for Steel Buildings.”

Velasquez De Bedout, Juan D; Office of Corporate and Global Partnerships administration, from University of Caldas, \$409,109, “Nexo Global - Colciencias 2019.”

Ventresca, Mario; industrial engineering, from Merck Sharp & Dohme Corp, \$152,114, “Cytomegalovirus Agent-Based Model for USA.”

Verma, Mohit S and **Ault, Aaron C**; agriculture & biological engineering program, electrical & computer engineering, from The Center for Produce Safety, \$30,000, “Multi Sponsor Gift.”

Vyn, Tony J; agronomy, from Furlong-Fox, \$500, “Agricultural Cropping Systems.”

Wachs, Juan P; **Beaudoin, Stephen P**; **Boudouris, Bryan W**; **Tan, Hong Z** and **Wu, Wenzhuo**; industrial engineering, chemical engineering, electrical & computer engineering, from National Science Foundation, \$1,499,795, “NRI: INT: Fingers See Things Differently (FIST-D): A Robotic Explosive Ordnance Disposal (EOD) Based on Augmented Tactile Imaging.”

Wang, Haifeng; aeronautics & astronautics, from FM Global, \$33,500, “Multi Sponsor - Voluntary Support.”

Wang, Haiyan and **Zhang, Xinghang**; materials engineering, from Whirlpool Corp, \$5,200, “Microstructural Characterization of Coatings.”

Wang, Hui-Hui; agriculture sciences education & communication, from University of Nebraska, \$18,691, “INFEWS RCN: Cultivating a National Collaborative for Research on Food, Energy, and Water Education (NC-FEW).”

Weibel, Justin A; mechanical engineering, from Aavidthermalloy, \$7,500, “Cooling Technologies Research Center (CTRC) (40001184).”

Weibel, Justin A; mechanical engineering, from Laird Technologies, \$22,500, “Cooling Technologies Research Center (CTRC) (40001184).”

Weinstein, Dana and **Ramanathan, Shriram**; electrical & computer engineering, materials engineering, from Defense Advanced Research Projects Agency, \$216,357, “Ni-Compound Microrobotic Actuators, Amendment 1; Grant 13000731.”

Wilkins, Rebecca D; field extension, from Duke Energy Foundation, \$4,800, “Harrison County 4-H Duke Energy Grant.”

Williams, Kipling D; psychological sciences, from Department of the Navy, \$90,589, “Understanding and Preventing Retaliatory Behaviors Following Sexual Assault and Harassment Reports.”

Williams, Rod N; forestry & natural resources, from Joshua or Daffney Sommerman, \$20, “Voluntary Support.”

Williams, Rod N and **Burgmeier, Nicholas G**; forestry & natural resources, from Indiana Department of Natural Resources, \$648,834, “Facilitating Hellbender Recovery in Indiana.”

Wilson-Frank, Christina R and **Hooser, Stephen B**; comparative pathobiology, from PHS-Food and Drug Administration, \$6,333, “Vet-LIRN Capacity Building Tissue Digestion.”

Wilson-Frank, Christina R and **Hooser, Stephen B**; comparative pathobiology, from PHS-Food and Drug Administration, \$39,484, “Vet-LIRN Capacity Building Tissue Digestion.”

Won, You-Yeon and **Boudouris, Bryan W**; chemical engineering, from Korea University, \$6,000, “Multi Sponsor Voluntary Support.”

Yazawa to Zollner

Yazawa, Kazuaki; mechanical engineering, from Northrop Grumman Corporation, \$100,000, “Integrated Thermal Management of Aerospace Vehicles Consortium Membership (Northrop Grumman).” (a Discovery Park award – Birck Nanotechnology Center)

Yih, Yuehwern; industrial engineering, from Agency for International Development, \$2,085,771, “Laser Buy-In: Multi-Country Study on Inclusive Education (MCSIE) for Learners with Disabilities in Cambodia, Malawi, and Nepal.”

Yih, Yuehwern; industrial engineering, from Agency for International Development, \$600,000, “Laser Buy-In: the Voices of the Indigenous People of Uganda.”

Yih, Yuehwern and **Shields, Cleveland G**; industrial engineering, human development & family studies, from Indiana Clinical & Translational Science Institute, \$14,313, “Tracking the Process of Treatment Seeking in Black Breast Cancer Patients.”

Young, Bryan G and **Johnson, William G**; botany & plant pathology, from Indiana Soybean Alliance, \$60,000, “Management of Herbicide-Resistant Weeds and Utility of Soybean Varieties with Stacked RR/LL Resistance.”

Yu, Denny and **Wachs, Juan P**; industrial engineering, from PHS-Biomedical Imaging & Bioengineering, \$221,595, “Real-Time Non-Intrusive Workload Monitoring-Integration of Human Factors in Surgery Training and Assessment.”

Zhang, Min; **Atallah Lanman, Nadia M**; **Zhang, Dabao** and **Ratliff, Timothy L**; statistics, Purdue Cancer Center administration, comparative pathobiology, from PHS-NIH National Cancer Institute, \$264,623, “Big Data Training for Cancer Research.”

Zheng, Wei; health sciences, from PHS-NIH National Institute of Environment Health Science, \$18,000, “The 13th Biennial Conference of the International Society for Trace Element Research in Humans.”

Zhou, Chenn Qian; mechanical & civil engineering, from NLMK Indiana, \$50,000, “Steel Manufacturing Visualization and Simulation Consortium (SMVSC) Membership.”

Zhou, Ran; **Abramowitz, Harvey**; **Spaulding, Michelle L**; **Chen, Chien-Chung** and **Kim, Hansung**; mechanical & civil engineering, biological sciences, from National Science Foundation, \$172,070, “Magnetic Resonance Imaging (MRI): Acquisition of Table Top Scanning Electron Microscope.”

Zollner, Patrick A; forestry & natural resources, from Animal Plant Health Inspection Service, \$86,358, “Black Vulture Research: Perceived and Actual Depredation Events of Cattle, Instructional Sessions, and Risk Assessments for Cattle Producers in South.”

Zollner, Patrick A; forestry & natural resources, from Animal Plant Health Inspection Service, \$49,952, “Black Vulture Research: Perceived and Actual Depredation Events of Cattle, Instructional Sessions, and Risk Assessments for Cattle Producers in South.” ■

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