# DIMENSIONS of DISCOVERY

## **Sponsored Program Awards**

### February 2018

#### **Abdel-Khalik to Buckmaster**

**Abdel-Khalik, Hany S**; nuclear engineering, from Sandia National Laboratories, \$78,000, "Development of Detection and Mitigation Algorithms for False Data Injection Cyberattacks Against Nuclear Facilities."

**Ajuwon, Kolapo**; animal sciences, from Biovet SA, \$37,515, "Use of Alquernat Immuplus to Optimize Growth and Health of Pigs."

**Ajuwon, Kolapo**; animal sciences, from JBS United Inc, \$35,000, "Nutritional Physiology Program."

**Alexeenko, Alina**; aeronautical and astronautical engineering, from Pfizer Inc, \$64,300, "Spray Freeze-Drying Model Development and Validation Studies."

**Allebach, Jan P** and **Chiu, George T**; electrical and computer engineering, mechanical engineering, from Sunvalleytek, \$165,000, "Development of an Automatic Nail Printer."

**Allebach, Jan P**; electrical and computer engineering, from Hewlett Packard, \$75,000, "Training-Based Halftoning Algorithms for Better Halftone Image Quality for the HP Digital Press."

**Ambrose, Rose Prabin Kingsly**; agricultural and biological engineering, from National Institute of Food and Agriculture, \$473,467, "Mechanisms and Mitigation of Dust Generation During Grain Handling Processing."

**Ambrose, Rose Prabin Kingsly**; agricultural and biological engineering, from Russell Stover Chocolates, \$900, "Multi-Sponsored Gift."

**Anderson, Gina M**; field extension educators, from Duke Energy Foundation, \$1,100, "Pollinator Day."

**Andrisani, Ourania M**; **Tran, Elizabeth** and **Xie, Jun**; basic medical science, biochemistry, statistics, from PHS-NIH National Institute of Diabetes and Digestive and Kidney Diseases, \$311,555, "Mechanisms of Hepatocyte Transformation by the Hepatitis B Virus X Protein."

**Apostoaia, Constantin M**; electrical and computer engineering, from The Vibration Institute, \$1,000, "Condition Monitoring and Fault Diagnosis of Induction Motor Drives (210038)."

**Bailey, Regan K**; foods and nutrition, from Huntsworth Health Corporation, \$3,000, "Bailey Huntsworth Health Voluntary Support."

**Baributsa, Dieudonne**; entomology, from Paige Ebner, \$250, "PICS Voluntary Support."

**Baributsa, Dieudonne**; entomology, from Larry L and Evelyn S Murdock, \$250, "PICS Voluntary Support."

**Basaran, Osman A**; chemical engineering, from ExxonMobil Chemical Company, \$25,000, "Purdue Process Safety and Assurance Center(P2SAC)."

**Basaran, Osman A**; chemical engineering, from BP Oil Company, \$25,000, "Purdue Process Safety and Assurance Center(P2SAC)."

**Basaran, Osman A**; chemical engineering, from Kenexis, \$3,750, "Purdue Process Safety and Assurance Center(P2SAC)."

**Basaran, Osman A**; chemical engineering, from Health Economics Res Grp of ELI Lilly and Co, \$25,000, "Purdue Process Safety and Assurance Center(P2SAC)."

**Beard, Jane Ann**; field extension educators, from Daviess County, \$36,745, "Kiesel 2018 Daviess County Government Support."

**Bertino, Elisa**; computer science, from IBM, \$70,410, "IBM Distributed Analytics and Information Science International Technology Alliance. (DAIS ITA)."

**Bharadwaj, Hari M**; speech, language and hearing sciences, from PHS-NIH National Institute on Deafness and Other Communication Disorders, \$339,253, "Individualized Assays of Supra-Threshold Hearing Deficits."

**Bigelow, Cale A**; horticulture and landscape architecture, from Helena Chemical Company, \$3,875, "Putting Greens Research."

**Bofferding, Laura C**; curriculum and instruction, from National Science Foundation, \$397,606, "Promoting Commenting and Debugging in Early Years Programming."

**Bolin, Jeffrey T**; Executive Vice President for Research and Partnerships, from Purdue University, \$147,630, "FY1718 Purdue Research Foundation (PRF) Research Grant (209911)."

**Borovsky, Arielle**; speech, language and hearing sciences, from Florida State University, \$22,500, "The Florida Learning Disabilities Research Center."

**Braun, James E**; mechanical engineering, from Emerson Climate Technologies, \$50,000, "Center for High Performance Building Consortium."

**Brooke, Jarred M**; forestry and natural resources, from Indiana Department of Natural Resources, \$2,000, "Native Warm Season Grasses (NWSG) Publication Agreement."

Buckmaster, Dennis; Krogmeier, James V; Ault, Aaron C; Boyer, Jeffrey L; Wahlman, Joel R; Camberato, James J; Casteel, Shaun N; Kladivko, Eileen J and Saraswat, Dharmendra; agricultural and biological engineering, electrical and computer engineering, Davis Purdue Agricultural Center, Southeast Purdue Agricultural Center, agronomy, from Mary S. Rice Farm Estate, \$10,000, "Infrastructure for Purdue Ag Big Data Enabling the PACs."



#### **Bugusu to Frueh**

Bugusu, Betty A; Hamaker, Bruce R; Lowenberg-Deboer, James M; Nielsen, S Suzanne; Bauchet, Jonathan J; Ferruzzi, Mario; Ileleji, Klein; Ricker-Gilbert, Jacob E and Woloshuk, Charles P; food science, Executive Vice President for Research and Partnerships, consumer science and retail, foods and nutrition, agricultural and biological engineering, agricultural economics, botany and plant pathology, from US Agency for International Development, \$948,099, "Feed the Future Innovation Lab for Food Processing and Post-Harvest Handling."

**Bullock, Darcy M** and **Habib, Ayman F**; civil engineering, from Indiana Department of Transportation, \$158,165, "SPR-4215 Rumble Stripes and Pavement Markings Delineation."

**Casteel, Shaun N**; agronomy, from Mary S. Rice Farm Estate, \$10,000, "Advancing Field Scouting: Drones and Decisions."

**Casteel, Shaun N**; agronomy, from Tessenderlo Kerley Inc, \$10,000, "Soybean Extension Research."

**Casteel, Shaun N**; agronomy, from Helena Chemical Company, \$9,500, "Soybean Extension Research."

**Chaubey, Indrajeet**; **Gitau, Margaret W** and **Saraswat, Dharmendra**; agricultural and biological engineering, from National Institute of Food and Agriculture, \$49,917, "Global Water Security for Agricultural Production and Natural Resources."

**Chavas, Daniel R**; earth and atmospheric sciences, from Russell O. Memorial BlosserFellowship, \$1,500, "Chen, Jie."

**Chen, Weinong W**; aeronautical and astronautical engineering, from Office of Naval Research, \$25,000, "Fundamental Dynamic Contact Failure Mechanisms in Granular Materials."

Chen, Zhihong; Appenzeller, Joerg and Gupta, Sumeet Kumar; electrical and computer engineering, from Semiconductor Research Corporation, \$1,500,000, "New Limits – New Materials for Logic, Memory and Interconnects." (a Discovery Park award – Birck Nanotechnology Center)

**Christie, Mark R** and **Hook, Tomas O**; forestry and natural resources, from Great Lakes Fishery Commission, \$197,803, "Population Connectivity and Local Adaptation in Lake Michigan Yellow Perch."

**Chuang, Keh-Wen**; quantitative business, from Indiana Campus Compact, \$2,250, "Identifying Factors Influencing Faculty Motivation and Satisfaction in Teaching Service-Learning Courses."

**Coddington, Jennifer A**; nursing, from Indiana University Health Arnett, \$65,706, "IU Health Faculty Practice Partnership."

**Connor, Robert J** and **Lloyd, Jason B**; civil engineering, from HNTB Corporation, \$128,072, "Fatigue Testing of a Centerbeam Cjp Splice for Expansion Joints on the Tappan Zee Bridge."

**Couture, John J**; entomology, from University of Wisconsin-Madison, \$10,187, "Foliar Traits and Ecosystem Variability Across Neon Domains; Amendment 1, Grant 109250."

**Deering, Amanda J**; food science, from Nextlogik, \$100, "Multi-Sponsored Gift Account."

**DeLaurentis, Daniel A**; aeronautical and astronautical engineering, from Lockheed Martin Corp., \$243,026, "Integrated Air and Missile Defense Modeling Collaboration-Phase 3."

**Diao, Xiumin**; engineering technology, from Tsinghua University, \$113,000, "Prediction of Motion Intention and its Application on Treadmill."

**Doudareva, Natalia** and **Morgan, John A**; biochemistry, chemical engineering, from National Science Foundation, \$217,505, "Deciphering Molecular Mechanisms Involved in Plant Volatile Emission."

**Douglas, Kerrie A** and **Boutin, Mireille**; engineering education, electrical and computer engineering, from The Boeing Company, \$100,000, "Learning-Objective Based Design and Assessment of Learner Trajectoreis."

**El Gamal, Ali; Krogmeier, James V; Love, David J; Michelusi, Nicolo** and **Peleato-Inarrea, Borja M**; electrical and computer engineering, from Air Force Research Laboratory, \$740,376, "Adaptive Wireless Networks for Spectrally Efficient Communication; Amendment 2, Grant 108818."

**Fairfax, Keke C** and **Rajwa, Bartlomiej P**; comparative pathobiology, from PHS-NIH National Institute of Allergy and Infectious Diseases, \$473,169, "Schistosoma Mansoni Infection During Pregnancy: Dissecting the Implications to Fetal Immunity."

**Felisberto Martins Ribeiro, Bruno**; computer science, from YWCA Silicon Valley, \$66,184, "Recommendation System for Curated Pathways App."

**Feng, Yaohua**; food science, from Partnership for Food Safety Education, \$3,300, "Multi-Sponsored Gift."

**Ferris, Virginia R**; entomology, from Adama Agricultural Solutions Canada, \$17,000, "Cyst Nematode Program."

**Field, William E**; agricultural and biological engineering, from National Institute of Food and Agriculture, \$180,000, "Indiana Agrability Project."

**Figueiredo, Marxa L**; Purdue Institute of Inflammation, Immunology and Infectious Disease, from PHS-NIH National Institute of Arthritis and Musculoskeletal and Skin Diseases, \$362,812, "Facilitating Endogenous Bone Repair in Arthritis with Targeted IL-27 Sonodelivery."

**Filley, Timothy R** and **Chaubey, Indrajeet**; earth and atmospheric sciences, from University of Illinois at Champaign-Urbana, \$78,224, "Critical Zone Observatory for Intensively Managed Landscapes (IML-CZO); Amendment 5, (Grant 106743)."

**Fisher, Timothy**; mechanical engineering, from Lockheed Martin Aeronautics Company, \$100,000, "Integrated Thermal Management of Aerospace Vehicles Consortium Membership."

**Frankenberger, Jane R**; agricultural and biological engineering, from Indiana Department of Environmental Management, \$48,528, "Building Capacity Among Indianas Watershed Leaders to Address Nonpoint Source Pollution."

**Frueh, Carolin E**; aeronautical and astronautical engineering, from National Aeronautics and Space Administration, \$9,829, "Supervised-Machine Learning for Intelligent Collision Avoidance Decision-Making and Sensor Tasking."

#### **Garimella to lyer**

**Garimella, Suresh V**; mechanical engineering, from Eaton, \$30,000, "Cooling Technologies Research Center (CTRC) 2018 Membership (204842)."

**Garimella, Suresh V**; mechanical engineering, from Toyota Research Institute of North America, \$30,000, "Cooling Technologies Research Center (CTRC) 2018 Membership (204842)."

**Garimella, Suresh V**; mechanical engineering, from Aavid Thermalloy, \$7,500, "Cooling Technologies Research Center (CTRC) 2018 Membership (204842)."

**Garimella, Suresh V**; mechanical engineering, from DuPont Central Research and Development, \$7,500, "Cooling Technologies Research Center (CTRC) Membership – Memo Match for 106029."

**Garner, Allen L**; nuclear engineering, from Air Force Office of Scientific Research, \$82,082, "A Unified, Universal Model for Electron Emission and Breakdown."

**Garrison, James L**; aeronautical and astronautical engineering, from University of Michigan, \$38,233, "Cyclone Global Navigation Satellite System (CYGNSS); Amendment 12, Grant 106499."

**Giannios, Dimitrios**; physics, from National Aeronautics and Space Administration, \$192,231, "Blazar Emission Modeling: Going Beyond the Spherical Cows."

**Ginzel, Matthew D**; entomology, from Virginia Technology, \$36,222, "Evaluations of Vacuum and Steam Heat as a Methyl Bromide Alternative for Phytosanitary Treatment of Hardwood and Softwood Logs."

**Goldenstein, Christopher S**; mechanical engineering, from Defense Threat Reduction Agency, \$98,937, "Wavelength-Modulation Absorption Spectroscopy for MHz Thermometry and Species Sensing."

**Goldenstein, Christopher S**; mechanical engineering, from Air Force Office of Scientific Research, \$149,762, "Characterization of Nanopropellant Combustion and Agglomerate-Breakup Physics via Infrared Laser-Absorption Imaging."

**Goldwasser, Dan**; computer science, from Google Inc, \$100,000, "Voluntary Support Projects."

**Gonzalez, Marcial** and **Wassgren, Carl R**; mechanical engineering, from Whirlpool Financial Corporation, \$37,500, "Maximum Random Closed Packing and Densest Packing Attainable Under External Vibrations."

**Goodsell, Johnathan Eugene** and **Yu, Wenbin**; Composites Manufacturing and Simulations Center, aeronautical and astronautical engineering, from Spirit Aerosystems Inc, \$153,399, "Micromechanical Modeling of Porosity in Composites."

**Gotham, Douglas J** and **Preckel, Paul V**; biological sciences, agricultural economics, from Midcontinent Independent System Operator, \$2,586,437, "A Proposal to Provide Independent Energy and Peak Demand Forecasts to the Midcontinent System Operator (Miso)." (a Discovery Park award – Energy Center)

**Groll, Eckhard A**; mechanical engineering, from Regal Beloit Corp, \$20,000, "Multi Sponsor Groll."

**Groll, Eckhard A**; mechanical engineering, from Whirlpool Corp, \$50,000, "Multi-Sponsor Groll."

**Groll, Eckhard A**; mechanical engineering, from Johnson Controls, Inc., \$93,254, "Development of a Mechanistic Model for Twin-Screw Compressors with Detailed Sub-Models for Estimating the Bearing Loads."

**Groll, Eckhard A** and **Weibel, Justin A**; mechanical engineering, from Oak Ridge National Laboratory, \$75,000, "Evaluating Adhesive Bonding of Aluminum and Copper in HVACandR Applications; Grant 108812."

Guan, Wenjing; Egel, Daniel S; Mansfield, Charles W; Monroe, James Scott and Nowaskie, Dennis H; horticulture and landscape architecture, botany and plant pathology, agronomy, field extension educators, Southwest Purdue Agricultural Center, from Mary S. Rice Farm Estate, \$9,000, "Replacement of an All-Terrain Utility Vehicle to Strengthen the Research and Extension Capacity of Southwest Purdue Agricultural Center."

**Guan, Wenjing**; horticulture and landscape architecture, from Robert Arriaga, \$5,100, "General Research Activities."

**Habib, Ayman F**; civil engineering, from Indiana Department of Transportation, \$80,037, "Lidar-Based Mobile Mapping System for Lane Width Evaluation and Reporting in Work Zones."

**Han, Qingyou**; engineering technology, from Wuhan Jingtai Science and Technology Co Ltd, \$13,000, "Center for Materials Processing Research (CMPR)."

**Han, Qingyou**; engineering technology, from Fiat Chrysler Automobiles, \$180,000, "Low Fe and Mn Aluminum Alloy."

**Hertig, John B**; pharmacy – administration, from Faegre Baker Daniels, LLP, \$50,400, "Independent Contractor Agreement – Faegre Baker Daniels."

**Holden, Stacy E**; history, from Purdue University, \$39,000, "History and Nostalgia and Edith Whartons Morocco."

**Holden, Stacy E**; history, from Purdue University, \$1,720, "History and Nostalgia and Edith Whartons Morocco (210425)."

**Hountz, Randall A**; industrial engineering, from Aspin, \$15,200, " ASPIN – Rural Network Allied Health Training Program." (a Discovery Park award – Regenstrief Center for Healthcare Engineering)

**Hu, Changdeng**; medicinal chemistry and molecular pharmacology, from Indiana Clinical and Translational Science Institute, \$500, "Jake Owens – Indiana Clinical and Translational Sciences Institute (CTSI) Poster Presentation Award."

**Ikley, Joseph T**; botany and plant pathology, from Indiana Soybean Alliance, \$1,800, "Indiana Soybean Alliance – Extension."

**Ishii, Mamoru**; nuclear engineering, from Nuclear Regulatory Commission, \$150,000, "Post-CHF Heat Transfer at High Pressure and Flow Conditions: Experimental Support for Trace."

**Iyer, Ananth V** and **Dunlop, Steven R**; management, from Indiana Department of Transportation, \$50,000, "4229 – Cost Effectiveness of Constructing Minimal Shelter to Store IDNTO Equipment (Weather Protection)."

**Iyer, Ananth V** and **Dunlop, Steven R**; management, from Indiana Department of Transportation, \$50,000, "4203 – Synthesis Study: Facilities (Enterprise Development, Sponsorship/Privatization)."

#### **Jiang to Mason**

**Jiang, Yi**; building construction and management technology, from Indiana Department of Transportation, \$175,000, "MEPDG Traffic Load Spectra for Local, Minor Arterial, Major Collector, and Minor Collector Roads."

**Jones, Trenton C** and **Matei, Sorin Adam**; history, communication, from Purdue University, \$29,000, "Prototyping a Digital Humanities Toolkit for Operational Military History."

**Kain, Patrick Paul**; philosophy, from University of Notre Dame, \$11,892, "Divinity, Humanity, and Autonomy in Kants Moral Realism."

Kaplan, Ian; Boyer, Stephen C; Foster, Ricky E; Ingwell, Laura L; Krupke, Christian H; Leuck, Jon D and Nowaskie, Dennis H; entomology, Northeast Purdue Agricultural Center, Pinney Purdue Agricultural Center, Southwest Purdue Agricultural Center, from Mary S. Rice Farm Estate, \$10,000, "Irrigation Equipment for Specialty Crop Research at Multiple PACs."

**Karcher, Darrin M**; animal sciences, from University of Minnesota, \$22,516, "Improving Well-Being of Commercial Turkeys through Gait and Footpad Assessment."

**Kelly, Brian C**; sociology, from Purdue University, \$10,320, "Cross-Substance Policy Influences on Trajectories of Youth Marijuana and Tobacco Use (210430)."

**Kelly, Brian C**; sociology, from Purdue University, \$25,000, "Cross-Substance Policy Influences on Trajectories of Youth Marijuana and Tobacco Use."

**Kenttamaa, Hilkka I**; chemistry, from Neste Oil Oyj, \$27,000, "Development of MS Methodology and Characterization of Ten Vacuum Residue Samples."

**Key, Nicole L**; mechanical engineering, from Rolls-Royce, Inc., \$251,685, "3-Stage Compressor Research: Advanced Technology for Small Core Axial Compressors."

**Key, Nicole L**; mechanical engineering, from Rolls-Royce, Inc., \$407,965, "CSTAR Performance Research: Advanced Technology for Small Core Compressors."

**Key, Nicole L**; mechanical engineering, from Honeywell International Foundation Incor, \$40,000, "Honeywell Aerospace Voluntary Support."

**Kihara, Daisuke**; biological sciences, from National Institutes of Health, \$265,635, "Structural Modeling of Multifarious Protein Complexes."

**Kildishev, Alexander V**; electrical and computer engineering, from Pennsylvania State University, \$74,675, " ACTEOM – Advanced Computational Toolkit for Engineered Optical Materials; Amendment 3."

**Kinzer-Ursem, Tamara L**; biomedical engineering, from Trask Trust Fund, \$29,705, "Portable Platform for Pathogen Detection."

**Kladivko, Eileen J**; agronomy, from Natural Resources Conservation Service, \$95,000, "Practical Summary, Analysis, and Interpretation of Soil Health Tests."

**Koltick, David S**; physics, from Technology Source Inc, \$7,000, "Koltick Voluntary Support."

**Krogmeier, James V** and **Buckmaster, Dennis**; electrical and computer engineering, agricultural and biological engineering, from University of Nebraska-Lincoln, \$4,873, "Support for Build and Deployment of Four Isoblue 2.0 Devices to Demonstrate Interoperability and Democratization of Machine Data from University Research Farms."

**Kubis, Tillmann C**; **Maassen, Jesse** and **Lundstrom, Mark S**; electrical and computer engineering, from Northwestern University, \$115,000, "EFRI 2-DARE: Scalable Growth and Anti-Ambipolar Heterojunction Devices; Amendment 3, Grant 107421."

**Laskin, Julia**; chemistry, from Pacific Northwest National Laboratory, \$55,981, "Understanding the Molecular Determinants of Uterine Receptivity."

**Lechtenberg, Victor Louis**; President, from Indiana University, \$10,000, "Support of Southeastern Small Business Development Center (SBDC) (204104)."

**Lee, Chi Hwan**; mechanical engineering, from UES Inc., \$50,000, "Defect-Free Integration of Plasmonic Thin Film Architectures with Arbitrary Substrates."

**Lee, Chun-Sing George**; electrical and computer engineering, from Institute of Electrical Electronics Engineering, \$10,000, "IROS."

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

**Liceaga, Andrea M**; food science, from Monogram Food Solutions Inc, \$2,000, "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 Heartland Food Products Group, \$1,500, "Multi-Sponsored Gift- Sensory."

**Lindshield, Stacy M**; anthropology, from Purdue University, \$38,000, "Reconsidering Female Chimpanzees: Nutritional and Political Motives to Hunt and Share Food."

**Lucietto, Anne M**; engineering technology, from American Society for Engineering Education, \$1,056, "Engineering Technology Students: Graduation Rates and Diversity Issues."

**MacDermid Wadsworth, Shelley; Broniarczyk, Kathy M** and **Topp, Dave**; child development and family studies, from Michigan State University, \$7,030, "Star Behavioral Health Provider Support for Michigan – FY 2018."

**Mansfield, Charles W**; agronomy, from Kansas State University, \$2,500, "National Winter Canola Variety Trial."

**Marsh, Dawn Gay**; history, from Purdue University, \$22,000, "Land of the Indians: An Indigenous History of Indiana."

**Martinez, Kimber J**; youth development and agricultural education, from Indiana State Department of Health, \$118,435, "Multicultural Efforts to End Sexual Assualt (Mesa) 2018-2019."

**Mason, Linda J**; graduate school administration, from The Agribusiness Council of Indiana, \$4,494, "Urban and Industrial Pest Management Research."

#### **Matson to Ratliff**

**Matson, Eric T** and **Smith, Anthony H**; computer and information technology, from Argonne National Laboratory, \$51,985, "Implementation of Sensor Arrays for a Waggle Stack; Modification 2 2018."

**Mattes, Richard D**; health and human sciences, from National Institute of Food and Agriculture, \$50,000, "The Pace of Life and Feeding: Health Implications."

**McCann, Maureen C**; biological sciences, from Office of Naval Research, \$1,000,000, "Neptune Center for Power and Energy Research."

**McCullouch, Bobby G**; civil engineering, from Indiana Department of Transportation, \$25,000, "Indiana Department of Transportation (INDOT) Research Program Benefit Cost Analysis- Return on Investment."

**McKee, Renee K**; cooperative extension service expenses, from National Institute of Food and Agriculture, \$928,800, "Military Extension Internship Program and Teen Adventure Camps."

**Mesecar, Andrew D** and **Kuhn, Richard J**; Purdue Institute of Inflammation, Immunology and Infectious Disease, from Northwestern University, \$140,342, "Structural Genomics Center Subcontract."

**Meyer, Terrence R** and **Key, Nicole L**; mechanical engineering, from Rolls-Royce, Inc., \$75,000, "Development of Particle Image Velocimetry (PIV) Techniques for Multistage Compressors."

**Miles, Richard D**; WBAA, from Corporation for Public Broadcasting, \$147,194, "2018 CPB Community Service Grant."

**Mishra, Dharmendra K**; food science, from Lakeside Farm Market, \$75, "Multi-Sponsored Gift."

**Mishra, Dharmendra K**; food science, from Bodle, Kerry P, \$75, "Multi-Sponsored Gift."

**Mishra, Dharmendra K**; food science, from Olive Oil Stores, Inc, \$50, "Multi-Sponsored Gift."

**Mishra, Dharmendra K**; food science, from Manufacturing Solutions International, \$150, "Multi-Sponsored Gift."

**Mishra, Dharmendra K**; food science, from Multi-Sponsored Industrials, \$100, "Multi-Sponsored Gift."

**Mitchell, Silvia Z**; history, from Purdue University, \$16,000, "A Palace of Her Own: Queen Mariana of Austrias Private Residence in Madrid as a Center of Diplomacy, 1679-1696."

**Mott, John H**; aviation technology, from Delta Air Lines Inc, \$129,500, "Advanced Aviation Analytics Institute for Research (A3IR-CORE)."

**Moulton, Sabra R** and **Baxmeyer, Adam W**; transportation services, airport operations, from Indiana Department of Transportation, \$206,148, "Purdue Airport – Long Runway (10-28) Rehabilitation Phase II – 2017 (Project Id: 16342) – State."

**Mukherjee, Partha P**; mechanical engineering, from National Renewable Energy Laboratory, \$100,000, "Microstructure Simulation for Computer-Aided Battery Electrode Design."

**Nemali, Krishna**; horticulture and landscape architecture, from Galemas Greenhouse Inc, \$3,000, "Nemali Multi- Sponsored."

**Niser, John C**; consumer and family sciences, from University of Technology Tralee, \$1,709, "HSD Consortium."

Niyogi, Devdutta S; Beaty, James J; Boyer, Jeffrey L; Boyer, Stephen C; Leuck, Jon D; Nowaskie, Dennis H; Scheeringa, Kenneth L; Shelton, Brad W; Tower, Jason E; Wahlman, Joel R and Young, Jay C; agronomy, agronomy farm, Davis Purdue Agricultural Center, Northeast Purdue Agricultural Center, Pinney Purdue Agricultural Center, Southwest Purdue Agricultural Center, Feldun Purdue Agricultural Center, Southern Indiana Purdue Agricultural Center, Southeast Purdue Agricultural Center, Throckmorton-Purdue Agricultural Center, from Mary S. Rice Farm Estate, \$10,000, "Maintenance and Improvement of Purdue Agricultural Centers Weather Station Network – 2018."

Niyogi, Devdutta S; Boyer, Stephen C; Scheeringa, Kenneth L and Shelton, Brad W; agronomy, Northeast Purdue Agricultural Center, Feldun Purdue Agricultural Center, from Mary S. Rice Farm Estate, \$10,000, "Weather Station for Feldun-Purdue Ag Center."

**Ogg, James G** and **Zhang, Yang**; earth and atmospheric sciences, from Columbia University, \$7,607, "Applying Cycle-Scaled Magnetostratigraphy to Rates of Terrestrial Input Evidenced by Lignin Records During Eocene and Quaternary: IODP Expedition 367 and 368."

**Ostanek, Kristine M**; child development and family studies, from PHS-NIH National Institute on Drug Abuse, \$174,091, "Bio-Behavioral Developmental Origins of Adolescent Substance Abuse."

**Otarola-Castillo, Erik R**; anthropology, from Purdue University, \$47,000, "Estimating Food Security Risk Management Behavior of Early North American Foragers and Farmers."

**Panigrahi, Suranjan**; engineering technology, from Lafayette Instrument Co., Inc, \$9,666, "Automated Parts Sorting System."

**Pasupathy, Raghu**; statistics, from Office of Naval Research, \$88,000, "Sampling Controlled Numerical Optimization."

**Patton, Aaron J**; horticulture and landscape architecture, from Bayer Cropscience, \$3,500, "Patton Multi-Sponsored #2 (Orig 301226)."

**Peng, Chunyi**; computer science, from Adobe Systems Incorporated, \$10,000, "Multi-Sponsored Voluntary Support."

**Pipes, R Byron**; aeronautical and astronautical engineering, from The Boeing Company, \$290,000, "Molding Simulation and Strength Prediction of Chopped Fiber Composites for BCA-2012-001-8."

**Pourpoint, Timothee L**; aeronautical and astronautical engineering, from Sandia National Laboratories, \$42,335, "Development of Hypergolic Solid Fuels and Propellants."

**Radcliffe, John Scott** and **Pogranichniy, Roman M**; animal sciences, comparative pathobiology, from Purina Animal Nutrition LLC, \$28,058, "Testing of Antiviral Activity of Chemical Compound Against PRRSV."

**Ratliff, Timothy L**; comparative pathobiology, from Purdue University, \$2,500, "PCCR Director Special Projects."

**Ratliff, Timothy L**; comparative pathobiology, from Purdue University, \$2,500, "PCCR Director Special Projects."

#### Ratliff to Subbarayan-Shastri

**Ratliff, Timothy L**; comparative pathobiology, from Purdue University, \$15,000, "PCCR Concept Awards."

**Ratliff, Timothy L**; comparative pathobiology, from Purdue University, \$2,500, "PCCR Director Special Projects."

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**Ratliff, Timothy L**; comparative pathobiology, from Purdue University, \$15,000, "PCCR Concept Awards."

**Revankar, Shripad T**; nuclear engineering, from Canadian Nuclear Safety Commission, \$71,313, "Probabilistic Assessment of Leak Rates through Steam Generator Tubes."

**Richmond, Douglas Scott** and **Enders, Laramy S**; entomology, from University of Missouri, \$68,452, "Developing Innovative Integrated Pest Management (IPM) Tactics for Billbug Control in Urban Environments through Early Detection and Non-Chemical Approaches."

**Rochet, Jean-Christophe**; Institute for Integrated Neuroscience, from Indiana Clinical and Translational Science Institute, \$39,500, "Inhibitors of Membrane-Induced Alpha-Synuclein Aggregation as Potential Therapies for Parkinsons Disease – Sayan Dutta."

**Rotar, Sean Michael**; horticulture and landscape architecture, from B Walter and Co, \$500, "Multi-Sponsored Gift Account."

**Roy, Kaushik**; electrical and computer engineering, from IBM, \$35,241, "Self-Aware Cognitive Services for Distributed Coalition Environments."

**Roy, Kaushik**; electrical and computer engineering, from IBM, \$15,296, "Self-Aware Cognitive Services for Distributed Coalition Environments."

**Sadeghi, Farshid**; mechanical engineering, from Cummins Business Services, \$135,000, "Tribology Lab Research."

**Sadeghi, Farshid**; mechanical engineering, from Honeywell International Foundation Incor, \$90,000, "Tribology Lab Research."

**Sadof, Clifford S**; entomology, from Animal Plant Health Inspection Service, \$5,198, "Indiana FY17 Forest Insect Taxonomic Support."

**Sadof, Clifford S; Foster, Ricky E; Kaplan, Ian; Krupke, Christian H** and **Richmond, Douglas Scott**; entomology, from University of Illinois at Champaign-Urbana, \$20,000, "North Central Integrated Pest Management Center (NCIPMC): A Regional Approach to Pest Management Implementation: FY14-FY17."

**Sanders, David A**; biological sciences, from Sandia National Laboratories, \$111,386, "Development of Crispr Delivery Vehicles Using Recombinant Viral Systems."

**Saunders, Michael R**; forestry and natural resources, from Nature Conservancy, the, \$5,000, "Voluntary Support – Saunders."

**Savaiano, Dennis A**; foods and nutrition, from The A2 Milk Company, \$60,000, "Savaiano Voluntary Support."

**Schneider, Steven P**; aeronautical and astronautical engineering, from General Atomics, \$50,000, "Mach-6 Quiet Tunnel."

**Schneider, Steven P**; aeronautical and astronautical engineering, from Office of Naval Research, \$198,971, "Towards a Mechanism-Based Procedure for Predicting Boundary-Layer Transition on Slender Models."

**Schoenlein, William E** and **Durkes, Abigail C**; biomedical engineering, comparative pathobiology, from Cook Research Incorporated, \$233,615, "Pre-Clinical Device Testing Agreement; Studies: CI-ELVA, CI-ELPK, CG-ELP, CI-PDE4, CUI-MOWG, CI-TOKI, AND POC."

**Schoenlein, William E** and **Durkes, Abigail C**; biomedical engineering, comparative pathobiology, from Cook Research Incorporated, \$49,981, "Pre-Clinical Device Testing Agreement; Studies: CI-PUMY, CI-PMSY, CI-PUMA, CI-PMSN, CI-APUM, CI-APMY, CUI-KUMP and Sentinels."

**Scott-Moncrieff, Joanna C R**; veterinary clinical science, from Veterinary Vision of Rochester, \$11,284, "Radiology Residency Support."

**Scott-Moncrieff, Joanna C R**; veterinary clinical science, from North Central Veterinary Emergency Center LLC, \$5,097, " ECC Residency Training Program."

**Scutari, Gesualdo**; industrial engineering, from Office of Naval Research, \$118,098, "Distributed Optimization Methods for Nonconvex In-Network Big Data Analytics."

**Searle, Catherine L**; biological sciences, from Indiana Academy of Science, \$3,000, "Infection of the Pathogenic Fungus, Batrachochytrium Dendrobatidis, in Amphibians of Indian Across Seasons and Freezing Events."

**Shannahan, Jonathan H; Whelton, Andrew J** and **Youngblood, Jeffrey P**; health sciences, civil engineering, materials engineering, from University of Illinois at Chicago, \$15,012, "Safety Evaluation of Cured-In-Place-Pipe Exposures."

**Sivasankar, Preeti Mahalakshmi**; speech, language and hearing sciences, from Vanderbilt University, \$30,532, "Pre-Clinical Testing of the Safety and Efficacy of Treatments for Voice Disorders; Amendment 2, Grant 108715."

**Sjogren, Jenny B**; medicinal chemistry and molecular pharmacology, from American Heart Association, \$2, "Targeting Molecular Mechanisms of Rgs2 Protein Degradation for Novel Cardiovascular Therapeutics (Grant 210164)."

**Stewart, Kara R**; animal sciences, from Mary S. Rice Farm Estate, \$8,500, "Evaluation of Prostaglandin Analogs in the 5-Day Co-Synch Plus Cidr Timed-Ai Protocol in Beef Cattle."

**Straw, Mark L**; animal sciences, from Agricultural Marketing Service, \$25,044, "USDA Shell Egg Board/Animal Science."

**Strimel, Greg J.**; industrial technology, from Venturewell, \$29,000, "Multi-Year Design and Innovation Purdue Polytechnic Curriculum."

**Subbarayan-Shastri, Ganesh**; mechanical engineering, from Juniper Networks, Inc., \$25,000, "Multi Sponsor Voluntary Support."

#### **Sundaram to Zhou**

**Sundaram, Neera J** and **Chiu, George T**; mechanical engineering, from Castrip LLC, \$126,004, "Advanced Control of Castrip LLC Twin-Roll Casting Process."

**Sutherland, John W**; environmental and ecological engineering, from Enkei America Inc, \$15,000, "Indianas Next Generation Manufacturing Competitiveness Center Focus Area Consortium."

**Tarko, Andrew P**; civil engineering, from Indiana Department of Transportation, \$20,000, "Short Course on Highway Capacity Analysis."

**Taylor, Lynne S**; industrial and physical pharmacy, from U.S. Department of Education, \$444,834, "Pharmaceutical Engineering 2015 Graduate Assistance in Areas of National Need (GAANN)."

**Tesmer, John**; biological sciences, from PHS-NIH National Cancer Institute, \$411,883, "GPCR – Linked RhoGEFs in Tumor Growth and Metastasis."

**Tzempelikos, Athanasios**; civil engineering, from Kawneer Company Inc, \$60,000, "Kawneer Company Inc."

**Tzempelikos, Athanasios**; civil engineering, from Lutron Electronics Co Inc, \$25,000, "Architecural Engineering – Tzempelikos."

**Ukkusuri, Satish V** and **Rao, P Suresh C**; civil engineering, from Ford Motor Company, \$129,516, "Resilience Modeling in Cities."

**Vacca, Andrea**; agricultural and biological engineering, from NFPA Education and Technology Foundation, \$1,000, "Multi-Sponsored Gift."

**Vyn, Tony J**; agronomy, from Mosaic Crop Nutrition LLC, \$25,000, "Agricultural Cropping Systems."

**Wagner, Robert G**; forestry and natural resources, from Indiana Arborists Association, Inc., \$15,000, "Indiana Arborists Association, Inc.."

**Waltz, Robert D** and **Groves, Delvin Brett**; biochemistry, Indiana State Chemist, from PHS-FDA Food and Drug Administration, \$16,000, "FDA Contract Oct 2017-September 2018."

**Wan, Hong**; industrial engineering, from Yanfang Li and Dadi Xing, \$10,000, "Fulan Technologies Voluntary Support."

**Weaver, Connie M**; foods and nutrition, from Sugar Association, Inc. (the), \$6,000, "Corporate Affiliates Fund."

**Weaver, Connie M**; foods and nutrition, from Pfizer Inc, \$6,000, "Corporate Affiliates Fund."

**Weaver, Connie M**; foods and nutrition, from Nestec Ltd Research Centre, \$10,000, "Multi-Sponsored Gift."

**Weaver, Connie M**; foods and nutrition, from Bayer Cropscience, \$6,000, "Corporate Affiliates Fund."

**Wei, Alexander** and **Yuan, Chongli**; chemistry, chemical engineering, from Sumitomo Chemical Company, \$76,694, "Nano-Brighteners for Chemical Sensing of Urinary Analytes."

**Weiner, Andrew M**; electrical and computer engineering, from Oak Ridge National Laboratory, \$56,158, "A Quantum Interconnect for Matter Qubits Based on Frequency Encoded Photonic Qubits."

**Weinstein, Dana**; electrical and computer engineering, from HRL Laboratories, LLC, \$186,903, "The Unconventional Processing of Signals for Intelligent Data Exploitation; Amendment 13, Grant 106611."

**Wendt, Michael K**; medicinal chemistry and molecular pharmacology, from PHS-NIH National Cancer Institute, \$314,389, "Overcoming Metastatic Resistance to Erbb-Targeted Therapies."

**Wilbur, Ronnie B**; speech, language and hearing sciences, from Ohio State University, \$23,715, "Computational Methods for the Study of American Sign Language Nonmanuals Using Very Large Databases; Amendment 3, Grant 108306."

**Williams, Rod N** and **Burgmeier, Nicholas G**; forestry and natural resources, from Conservation Foundation, \$2,000, "Mesker Park Zoo Hellbender Havoc Kiosk Installation."

**Wlodarczyk, Jaroslaw**; mathematics, from Binational Science Foundation, \$22,157, "Strong Semistable Reduction."

**Xu, Dongyan**; computer science, from Analog Devices, \$60,000, "Center for Education and Research in Information Assurance and Security (CERIAS) Voluntary Support."

**Xu, Dongyan**; computer science, from Citigroup, \$60,000, "Center for Education and Research in Information Assurance and Security (CERIAS) Voluntary Support."

**Ye, Peide** and **Datta, Supriyo**; engineering administration engineering experiment, electrical and computer engineering, from University of Notre Dame, \$450,000, "Applications and Systems Driven Center for Energy-Efficient Integrated Nanotechnologies (Ascent)." (a Discovery Park award – Birck Nanotechnology Center)

**Yeo, Yoon**; industrial and physical pharmacy, from Eli Lilly and Company, \$45,000, "Development of Environmentally-Adaptive Theranostic Nanoparticles for Cancer Image and Therapy."

**Yu, Wenbin**; aeronautical and astronautical engineering, from Roccor, LLC, \$37,000, "Shear Stabilization Based Framework for the Failure Testing and Analysis of HSCs."

**Zavattieri, Pablo D**; civil engineering, from University of California-Riverside, \$50,997, "Convergent Evolution to Engineering: Multiscale Structures and Mechanics in Damage Tolerant Functional Bio-Composite and Biomimetic Materials; Amendment 5, Grant 107466."

**Zentner, Michael G** and **Parsons, Paul**; RCAC, computer graphics technology, from University of California – San Diego, \$35,000, "S2i2: Impl: the Science Gateways Community Institute (Sgci) for the Democratization and Acceleration of Science."

**Zhang, Hao**; statistics, from Mosaic Crop Nutrition LLC, \$5,000, "Multi-Sponsored Statistical Research."

**Zhou, Chenn Qian**; mechanical and civil engineering, from SSAB Americas Research and Development, \$45,000, "Steel Manufacturing Visualization and Simulation Consortium (SMVSC) Membership."

**Zhou, Chenn Qian**; mechanical and civil engineering, from Cliffs Natural Resources, \$25,000, "Steel Manufacturing Visualization and Simulation Consortium (SMVSC) Membership."

#### **Zhou to Zwier**

**Zhou, Chenn Qian** and **Silaen, Armin K**; Center for Innovation through Visualization and Simulation, from Nucor Steel Corp., \$18,584, "Computational Fluid Dynamics (CFD) Study on the Common Headers Used in the Process Gas Filtration System."

**Zhou, Chenn Qian**; mechanical and civil engineering, from Praxair Inc, \$45,000, "Steel Manufacturing Visualization and Simulation Consortium (SMVSC) Membership."

**Zhou, Chenn Qian**; mechanical and civil engineering, from U.S. Steel Corporation, \$45,000, "Steel Manufacturing Visualization and Simulation Consortium (SMVSC) Membership."

**Zhou, Chenn Qian**; mechanical and civil engineering, from Nucor Steel Corp., \$45,000, "Steel Manufacturing Visualization and Simulation Consortium (SMVSC) Membership."

**Zhou, Chenn Qian**; mechanical and civil engineering, from Arcelormittal USA, \$45,000, "Steel Manufacturing Visualization and Simulation Consortium (SMVSC) Membership."

**Zwier, Timothy S**; chemistry, from DOE-ER-Basic Energy Sciences Chemistry, \$180,967, "Experimental Characterization of the Potential Energy Surfaces for Conformational and Structural Isomerization." ■

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