

DIMENSIONS *of* DISCOVERY

Sponsored Program Awards

October 2019

Aime to Buczkowski

Aime, Mary Catherine; botany & plant pathology, from Agricultural Research Service, \$59,910, "Eradication and Bacterial Metagenomics of Globodera."

Ajuwon, Kolapo; animal sciences, from Biomatrix Inc, \$20,000, "Nutritional Physiology Program 30001659."

Alexeenko, Alina; aeronautics & astronautics, from IMA Life, \$10,000, "Lyohub Consortium (IMA Life)."

Allebach, Jan P; electrical & computer engineering, from Mime, Inc, \$16,455, "Tools for Analysis of Skin Color from Portrait Photos and Recommendations for Makeup Color and Fashion Accessory Colors."

Allebach, Jan P; electrical & computer engineering, from HP Inc, \$75,000, "Image Registration for Printed Image Quality."

Allebach, Jan P; electrical & computer engineering, from HP Inc, \$75,000, "Federated Learning for Computer Vision."

Bailey, Regan K; nutrition science, from Wallace, Taylor C, \$8,250, "Think Healthy Voluntary Support – Bailey."

Beaudoin, Stephen P; chemical engineering, from Northeastern University, \$140,000, "A Novel Method for Evaluating the Adhesion of Explosives Residues."

Beckerman, Janna L; botany & plant pathology, from Basf Corporation, \$6,000, "Indiana Arborists Association, Inc.."

Bhargava, Bharat; computer science, from Sandia National Laboratories, \$50,000, "Moving Target Defense for Space Systems."

Bhargava, Bharat; computer science, from Northrop Grumman Corporation, \$200,000, "Bhargava – Northrop Grumman Realm."

Bianchi, Antonio; computer science, from National Science Foundation, \$174,972, "CRII: SaTC: Vetting and Improving the Usage of Trusted Execution Environments for Authentication in Mobile Devices."

Biehl, Larry L; research computing administration, from America-view Inc, \$23,500, "Stateview Program Development and Operations for the State of Indiana."

Biswas, Rudro R; physics & astronomy, from Sandia National Laboratories, \$65,543, "Reversible Computing Academic Alliance; Amendment 1, Grant 14000396."

Bogdanor, Michael J and Sharp, Nathan D; Composites Manufacturing and Simulation Center, from University of Tennessee, \$60,004, "Materials Characterization for Large Scale Additive Manufacturing."

Bolin, Jeffrey T; Executive Vice President for Research & Partnerships administration, from Purdue Research Foundation, \$30,657, "19-20 Purdue Research Foundation (PRF) Research Grants (60000025)."

Bouman, Charles A; electrical & computer engineering, from Northeastern University, \$75,000, "Alert: CT Image Reconstruction and Processing for Air Transportation Security Phase 2."

Bowman, Aaron B; health sciences, from PHS-NIH National Institute of Environment Health Science, \$22,798, "Gene-Neurotoxicant Interactions in Huntington Disease."

Braun, James E; mechanical engineering, from Ingersoll-Rand Endowment, \$25,000, "Center for High Performance Building Consortium (Ingersoll-Rand)."

Braun, James E; mechanical engineering, from Honeywell Inc., \$50,000, "Center for High Performance Building Consortium (Honeywell International)."

Braun, James E; mechanical engineering, from Carrier Corporation, \$75,000, "Multi-Sponsor Voluntary Support – James Braun."

Briggs, Scott D; Dilkes, Brian and Hall, Mark C; biochemistry, from PHS-NIH National Institute of Allergy and Infectious Diseases, \$380,246, "Set Domain Epigenetic Factors Govern Antifungal Drug Efficacy and Fungal Pathogenesis."

Bryan, Lynn A; Guzey, Siddika; Menekse, Muhsin and Newton, Jill A; curriculum & instruction, biological sciences, engineering education, from Indiana Commission for Higher Education, \$255,000, "Strengthening Indiana's Future through the 21st Century Science, Technology, Engineering & Mathematics (STEM) Teachers Scholarship Program."

Bryan, Lynn A and Samarapungavan, Ala; physics & astronomy, educational studies, from The Concord Consortium Inc, \$247,614, "Sensing Science through Modeling Matter: Kindergarten Students? Development of Understanding of Matter and its Changes; Amendment 2.(Grant 10001443)."

Buckmaster, Dennis; agricultural & biological engineering program, from Centricity LLC, \$12,500, "Oats Consortium (40002052)."

Buckmaster, Dennis; agricultural & biological engineering program, from CNH America LLC, \$15,000, "Oats Consortium (40002052)."

Buckmaster, Dennis; agricultural & biological engineering program, from CNH America LLC, \$15,000, "Oats Consortium."

Buczkowski, Grzegorz A; entomology, from BASF Corporation, \$3,000, "Alpine Insecticide for the Control of Nuisance Flies on Animal Farms."

Bullock to Erk

Bullock, Darcy M; civil engineering, from Indiana Department of Transportation, \$500,000, “SPR 4251 – Probe Data to Support Research and Implementation (21000208).”

Bullock, Darcy M; civil engineering, from Indiana Department of Transportation, \$51,259, “Transportation Research Board Annual Meeting Activities.”

Byrn, Stephen Robert; industrial & physical pharmacy, from University of Minnesota, \$20,191, “Synthesis, Polymorph Screen, and Stability Assessment for Non-Good Manufacturing Practice (Non-GMP) Manufacture of and Associated Analytical Activities.”

Caffee, Marc W; physics & astronomy, from U.S. Geological Survey, \$11,219, “Cosmogenic Nuclide Chronologies.”

Caffee, Marc W; physics & astronomy, from U.S. Geological Survey, \$63,225, “Burial Ages Using ¹⁰Be and ²⁶Al: Sep19_MenloPark.”

Caldwell, Barrett S; Johnson, Mary E and Pitts, Brandon J; industrial engineering, aviation & transportation technology, from Federal Aviation Administration, \$68,849, “Pegasas: Augmented Weather Information Project – Project 33.”

Cappelleri, David J; mechanical engineering, from Face Foundation, \$10,000, “Purdue University and Franche-Comte University/FEMTO-ST International Intelligent Microrobotics Exchange (I2ME) Program.”

Cardella, Monica E; engineering education, from National Science Foundation, \$210,079, “NSF Intergovernmental Personnel Assignment (IPA) – Monica Cardella.”

Chapple, Clint C S and Dilkes, Brian; biochemistry, from U.S. Department of Energy, \$790,566, “Coupling Metabolic Source Isotopic Pair Labeling and Genome Wide Association for Metabolite and Gene Annotation in Plants.”

Chapple, Clint C S; agricultural administration, from U.S. Department of Energy, \$119,878, “Control of Carbon Allocation in Phenylpropanoid Metabolism.”

Childress, Michael O; veterinary clinical sciences, from University of Minnesota, \$73,406, “Clinical Evaluation of Propranolol in Combination with Doxorubicin for the Treatment of Hemangiosarcoma.”

Christian, John A; comparative pathobiology, from Western University of Health Sciences, \$7,540, “Cytology Resource Center (40001198).”

Christian, John A; comparative pathobiology, from Western University of Health Sciences, \$7,540, “Cytology Resource Center (40001198).”

Connor, Robert J; civil engineering, from HNTB Corporation, \$78,600, “Phase II Testing of Complete Joint Penetration (CJP) Splices for Expansion Joints on the Tappan Zee Bridge.”

Cooks, Robert Graham; chemistry, from Waters Technologies Corporation, \$80,000, “Increased Performance in Cancer Diagnostics Using the Waters Synapt.”

Creek, Julie A; diversity & multicultural affairs, from Vincennes University, \$29,098, “Teaching/Mentoring Chronic Traumatic Encephalopathy (CTE) Students in Science, Technology, Engineering & Mathematics (STEM) Classrooms.”

Crossley, William A; aeronautics & astronautics, from Federal Aviation Administration, \$150,000, “Project #25: General Aviation 2030 – GA Exploratory Analyses; Amendment #87, Grant 16100045.”

Datta, Supriyo; electrical & computer engineering, from University of Notre Dame, \$112,500, “A Scalable Probabilistic Computer for Quantum-Inspired Algorithms.”

DeLaurentis, Daniel A and Crossley, William A; aeronautics & astronautics, from National Institute Aerospace, \$226,930, “Operations Limits for Passenger-Carrying Urban Air Mobility Missions.”

Delp, Edward J; electrical & computer engineering, from Air Force Research Laboratory, \$88,816, “Media Forensics Integrity Analytics; FA8750-16-2-0193 (Grant 13000477).”

Delp, Edward J and Comer, Mary L; electrical & computer engineering, from Lockheed Martin Corp., \$95,000, “Multi-Entity Activity Characterization.”

Dooley, Frank J and Wong Davis, Kristina M; Vice President for Teaching & Learning administration, enrollment management, from Arizona State University, \$45,000, “UIA: Chatbots Scale Project.”

Doucette, Suzanne C; chemistry, from University of Pennsylvania, \$205,000, “CCI Phase I: NSF Center for Sustainable Separations of Metals.”

Duvall, John N; English, from Johns Hopkins University, \$15,282, “Journal of Modern Fiction Studies.”

Dydak, Ulrike; health sciences, from Indiana University, \$25,429, “Compounded Neuronal Damage in Comorbid Cigarette Smoking and Addiction.”

Dyke, Shirley J; Braun, James E; Marais, Karen; Billionis, 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.”

Ebert, David S; electrical & computer engineering, from Vaccine, LLC, \$10,000, “Multi Sponsor – Voluntary Support.”

Ehlers, Shawn G; Field, William E and Niyogi, Devdutta S; agricultural & biological engineering program, agronomy, from National Institute of Food & Agriculture, \$104,234, “Indiana Prepared (Purdue Rural Emergency Preparedness), Development of Targeted Rural-Disaster Specific Resources and Associated Training with Special Emphasis on Agricultural Production Sites.”

Elliott, Daniel S; electrical & computer engineering, from National Science Foundation, \$189,492, “Precision Measurement of Parity Non-Conserving, Weak-Force Induced Transitions in Atomic Cesium.”

Elliott, Daniel S; electrical & computer engineering, from National Science Foundation, \$192,928, “Precision Measurement of Parity Non-Conserving, Weak-Force Induced Transitions in Atomic Cesium.”

Erickson, Bruce J; agronomy, from Meister Publishing Co, \$10,000, “American Society of Agronomy.”

Erk, Kendra A and Olek, Jan; materials engineering, civil engineering, from Indiana Department of Transportation, \$187,629, “SPR-4419: Superabsorbent Polymers for Internally Cured Concrete.”

Evans to Haviarova

Evans, Janice Perry; biological sciences, from PHS-NIH National Institute of Child Health and Human Development, \$329,375, "The Oocytes Progression through Meiosis: Involvement of a Heart Disease-Associated Protein."

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

Farkas, Brian E; food science, from Ckohl P or Jesse C Andrew, \$50, "Multi Sponsored Gift Fermentation."

Field, William E; agricultural & biological engineering program, from National Institute of Food & Agriculture, \$531,000, "National Agriability Project, 2016-2020."

Filley, Timothy R; agronomy, from University of Illinois at Champaign-Urbana, \$38,000, "Critical Zone Observatory for Intensively Managed Landscapes (IML-CZO)."

Finley, John P; physics & astronomy, from Scharenberg, Rolf or Mary Jane, \$132,000, "Voluntary Support."

Fleet, James C; Dilkes, Brian; Weaver, Connie M and Kazemian, Abdolmajid; nutrition science, biochemistry, from PHS-NIH National Institute of Diabetes and Digestive and Kidney Diseases, \$499,982, "Nutrigenetics of Intestinal Calcium (CA) Absorption."

Frankenberger, Jane R and Cherkauer, Keith A; agricultural & biological engineering program, from Foreign Agricultural Service, \$49,727, "Borlaug Fellow – Colombia."

Freeman, Jennifer L and Wasel, Ola; health sciences, from University of Cincinnati – Education and Research Center, \$4,311, "Neurotoxicity of Polyfluoroalkyl Substance (PFAS) Mixtures in Firefighting Materials."

Gallant, Kathleen Hill; nutrition science, from PHS-NIH National Institute of Diabetes and Digestive and Kidney Diseases, \$110,574, "Effects of Dietary Phosphorus Restriction on Whole-Body Calcium and Phosphorus Balance and Kinetics in Patients with Moderate Chronic Kidney Disease."

Garcia Bravo, Jose M; engineering technology, from NFPA Education and Technology Foundation, \$10,000, "Multi Sponsor – Voluntary Support."

Garrison, James L; aeronautics & astronautics, from National Aeronautics and Space Administration, \$92,768, "Root-Zone and Surface Soil Moisture Retrieval from L, P and S-Band Signals of Opportunity (SoOp) Reflectometry."

Ghosh, Arun K; medicinal chemistry & molecular pharmacy, from University of California – Santa Cruz, \$186,716, "Mechanisms of the Spliceosome Protein SF3B1 and Inhibitors."

Gkritza, Konstantina and Fricker, Jon D; civil engineering, from Indiana Department of Transportation, \$123,286, "SPR 4441: Public Acceptance of Indiana Department of Transportation (INDOT)?S Transportation Services."

Gondhalekar, Ameya D; entomology, from BASF Corporation, \$3,600, "Effects of Alpine Flea & Bed Bug on Bed Bug Nymphs."

Gondhalekar, Ameya D; entomology, from BASF Corporation, \$4,500, "Efficacy of Alpine II Fly Bait Against Various Cockroach Species."

Gonzalez, Marcial; mechanical engineering, from Procter & Gamble Company, \$10,000, "Voluntary Support."

Gore, Jay P and Hasti, Veeraraghava Raju; mechanical engineering, from Georgia Institute of Technology, \$59,977, "A Novel Multi-Scale Turbulence-Chemistry Closure in Large-Eddy Simulation to Account for Sensitivity to Fuel Composition and Properties."

Gounder, Rajamani P; chemical engineering, from Del-Ray Contract Glazing, LLC, \$50,000, "Multi Sponsor – Voluntary Support."

Gounder, Rajamani P and Ribeiro, Fabio H; chemical engineering, from Cummins, Inc., \$140,000, "Ammonia Selective Catalytic Reduction (SCR) on Copper (Cu) Catalysts."

Gounder, Rajamani P; chemical engineering, from Korea University, \$6,000, "Byungjin Lee -- Purdue University/Korea University Brain Korea Program for Leading Universities & Students (BK PLUS) Exchange Program (Faculty Sponsor: Rajamani Gounder)."

Gounder, Rajamani P; chemical engineering, from Norman Kent Kidder, \$50,000, "Multi Sponsor – Voluntary Support."

Govindaraju, Rao S; civil engineering, from American Society of Civil Engineers, \$6,125, "Support for the Asce Journal of Hydrologic Engineering."

Gregory, Anne E and Eisenhauer, Mary Jane; education & counseling, from Early Learning Indiana, \$28,000, "Early Learning Fellows."

Groll, Eckhard A and Ziviani, Davide; education administration, mechanical engineering, from Air Squared, \$42,000, "Theoretical and Experimental Analyses of a Dual-Evaporator Organic Rankine Cycle with Spinning Scroll Expander."

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

Guan, Wenjing; horticulture & landscape architecture, from Sakata Seed America Inc., \$1,500, "General Research Activities."

Guan, Wenjing; horticulture & landscape architecture, from Hm Clause Inc, \$1,050, "General Research Activities."

Handa, Avtar Krishan; horticulture & landscape architecture, from Agricultural Research Service, \$90,200, "Molecular Understanding of Hormonal Control of Stress-Induced and Non-Stress Physiology of Tomato."

Handy, James C; TAP/Manufacturing Extension Partnership (MEP), from Indiana Department of Transportation, \$22,232, "SPR-4353 Central Hot Mix Asphalt (HMA) Acceptance Lab Process Improvement Implementation Plan."

Harpur, Brock Alexander; entomology, from N Dakota Department of Ag, \$35,489, "Using Genomics to Predict Quality: Which Genes Produce the Best Drones for North Dakota? Summary."

Hatasa, Kazumi; language & culture, from Japan Foundation, \$137,001, "JIT- Japan Foundation Institutional Support."

Haviarova, Eva; forestry & natural resources, from Virginia Polytechnic Institute & State University, \$45,074, "Multi-State Effort to Overcome Barriers to Low-Value Hardwood Lumber for Cross-Laminated Timber (CLT) Manufacture."

Hertel to Konieczny

Hertel, Thomas W; agricultural economics, from Joint Research Centre, \$20,435, "Global Trade Analysis Project (GTAP) Consortium (EC-JRC)."

Hoagland, Lori A; Egel, Daniel S and Mengiste, Tesfaye D; horticulture & landscape architecture, botany & plant pathology, from National Institute of Food & Agriculture, \$1,999,614, "Tomato Organic Management and Improvement Project (TOMI): Part II."

Hockerman, Gregory H; medicinal chemistry & molecular pharmacology, from Southern Illinois University, \$111,866, "Calcium Signaling in Skeletal Muscle Atrophy: a Novel Role for the Ether-ago-go-related Gene-1a (ERG1a) Potassium (K+) Channel."

Hoverman, Jason T; Flynn, Robert W; Lee, Linda S and Sepulveda, Maria Soledad; forestry & natural resources, agronomy, from Michigan Department of Natural Resources, \$115,000, "Quantifying the Distribution, Movement, and Ecological Risk of Per-/Polyfluoroalkyl Substances (PFAS) in an Affected Wetland Ecosystem."

Howarter, John A; materials engineering, from Semiconductor Research Corporation, \$5,200, "Undergraduate Research Program – Purdue."

Howell, Kathleen; aeronautics & astronautics, from National Aeronautics and Space Administration, \$25,000, "Design, Targeting and Guidance Strategies in Complex Multi-Body Regimes Incorporating Low-Thrust Capabilities; Amendment 2; Grant 12000260."

Hu, Y Charlie; electrical & computer engineering, from Intel Corporation, \$58,333, "Voluntary Support Intel."

Hudmon, Andy; medicinal chemistry & molecular pharmacology, from Indiana University, \$46,500, "Sodium Channels and Electrogenesis in Sensory Neurons; Amendment 2; Grant 11000717."

Hudmon, Karen S; pharmaceutical practice, from PHS-NIH National Cancer Institute, \$312,555, "Advancing the Role of Pharmacy in Tobacco Cessation."

Iyer-Pascuzzi, Anjali; botany & plant pathology, from National Aeronautics and Space Administration, \$50,000, "The Effect of Spaceflight and Microgravity on Plant Defense Responses."

Jacob, Zubin; electrical & computer engineering, from University of Connecticut, \$127,500, "CSI Selected Projects 2019: Development of Experimental Test-Bed for Multi-User Quantum Communication Protocols." (a Discovery Park award – Birck Nanotechnology.)

Jacobs, Douglass F; forestry & natural resources, from National Institute of Food & Agriculture, \$25,000, "Society and Policy Influences on Biotechnology Risk Assessment for Restoration of Threatened Forest Tree Species."

Jagannathan, Suresh; computer science, from Systems & Technology Research, \$78,000, "Mitchell: Software-Defined Hardware; Modification2; Grant 19200235."

Jenkins, James L; Huang, Wan Ju; Takahashi, George and Zimpfer, Mark D; construction management technology, teaching & learning technologies administration, research computing administration, from Occupational Safety & Health Administration, \$75,000, "Residential Construction Safety Utilizing Virtual Reality (VR)."

Jesiek, Brent K; engineering education, from University of Tennessee, \$16,709, "EAGER: Developing a Consortium Model for the Successful Implementation of the Rising Engineering Education Graduate Experience (REEFE)."

Jiang, Wen; biological sciences, from Indiana University, \$264,632, "Atomic Models of Human Tau Filaments and Development of Tau Ligands."

Johal, Gurmukh S; botany & plant pathology, from The Agricultural Alumni Seed Improvement, \$10,000, "Johal Voluntary Support."

Johnson, Mary E and Feng, Yilin; aviation & transportation technology, from Old Dominion University Research Foundation, \$12,000, "Simulation Analysis of End-Around Taxiway Operation."

Johnson, William G; botany & plant pathology, from Amvac Chemical Corporation, \$20,875, "Weed Science Research Voluntary Support."

Johnson, William G; botany & plant pathology, from FMC Corporation, \$15,000, "Weed Science Research Voluntary Support."

Johnson, William G; botany & plant pathology, from Bayer Crop Science, \$5,000, "Weed Science Research Voluntary Support."

Jung, Andreas; physics & astronomy, from Fermi National Accelerator Laboratory, \$67,000, "High Luminosity (HL) Large Hadron Collider (LHC) Compact Muon Solenoid (CMS) Detector Upgrade Project? Outer Tracker."

Kais, Sabre; chemistry, from Soar Technology, Inc, \$45,000, "Resisting Adversarial Attacks with Quantum Machine Learning."

Kelly, Brian C; sociology, from Utah State University, \$59,791, "Sibling Socialization of Alcohol and Drug Use from Early through Late Adolescence; Amendment 3; Grant 11000679."

Key, Nicole L; mechanical engineering, from Rolls-Royce Corporation, \$40,000, "Purdue 3-Stage ? Commissioning of Rig Upgrades & Performance Testing – Amendment to Grant 40002533."

Key, Nicole L; mechanical engineering, from Rolls-Royce, Inc., \$363,000, "Utilization of Additive Manufacturing for a Centrifugal Compressor Rig."

Kilaz, Gozdem; engineering technology, from Naval Research Laboratory, \$162,012, "Standardization of Two Dimensional Gas Chromatography for Navy Tactical Fuels Analyses."

Kim, Tae Yoon; biomedical engineering, from PHS-NIH National Institute of General Medical Science, \$427,522, "Universal Roles of Force Generation and Transmission in Biological Systems."

Knopik, Valerie S; human development & family studies, from Emory University, \$38,874, "The Kinship Risk Score: an Integrative Tool to Prioritize Alcohol and Drug-Addiction; Modification3; Grant 11000698."

Knopik, Valerie S; human development & family studies, from Bradley Hospital, \$39,447, "Longitudinal Examination of Deoxyribonucleic Acid (DNA) Methylation in Maltreated Children; Amendment 1; Grant 11000822."

Kong, Nan; biomedical engineering, from National Science Foundation, \$243,021, "Grant Opportunities for Academic Liaison with Industry (GOALI)/Collaborative Research: Consistent Nursing Home Staff Planning Under Heterogeneous Service Demand."

Konieczny, Stephen F; biological sciences, from University of North Carolina at Chapel Hill, \$192,457, "Thrombin-Dependent Mechanisms of Pancreatic Ductal Adenocarcinoma Disease."

Krane to Pawley

Krane, Matthew J M; materials engineering, from Arcelormittal USA, \$6,000, "Arcelor Mittal Steel Processing Project."

Krane, Matthew J M; materials engineering, from Arcelormittal USA, \$6,000, "Arcelor Mittal Steel Processing Project."

Krause, Jane E; pharmaceutical practice, from Coalition for a Drug Free Tippecanoe County, \$5,000, "Addressing Alcohol and Prescription Drug Abuse/Misuse on Campus: a Continuing Project."

Laskin, Alexander; chemistry, from Stony Brook University, \$29,815, "Microanalysis of Atmospheric Ice Nucleating Particles."

Li, Tongcang; electrical & computer engineering, from Sandia National Laboratories, \$66,700, "Levitated Dielectrics and Advanced Proof Masses for Sensors."

Lister, Matthew L; physics & astronomy, from National Aeronautics and Space Administration, \$153,900, "MOJAVE: Probing Acceleration, Magnetic Field Evolution and Gamma-Ray Emission in Active Galactic Nucleus (AGN) Jets."

Lopez-de-Bertodano, Martin A; nuclear engineering, from Fluor Marine Propulsion, LLC, \$122,326, "Transient Two-Fluid Model Development."

Lyon, Angeline M; Cannon, Jason R and Rochet, Jean-Christophe; chemistry, health sciences, medicinal chemistry & molecular pharmacology, from Wellesley College, \$85,929, "Leucine-rich repeat kinase 2 (LRRK2) Kinase Activity and Mitochondrial Oxidative Stress."

Ma, Jianxin; agronomy, from Corteva Agriscience, \$99,974, "Soybean New RPS Gene Discovery and Marker Development."

Ma, Zhao; forestry & natural resources, from U.S. Forest Service, \$10,000, "USDA Forest Service Northern Region Private Nursery Survey."

MacDermid Wadsworth, Shelley and Broniarczyk, Kathy M; human development & family studies, Military Research Institute (MFRI) conference, from Elizabeth Dole Foundation, \$30,013, "Measuring Communities and Hidden Heroes Cities."

MacDermid Wadsworth, Shelley; human development & family studies, from Lilly Endowment Inc., \$179,150, "Transforming transitions for Military and Veteran Families (41000328)."

McKee, Renee K; Ruiz, Yumary and Diaz-Vargas, Xiomara N; field extension, health & kinesiology, field extension, from National Institute of Food & Agriculture, \$87,000, "Purdue University Sustainable Community Project- Indiana Juntos."

Merwade, Venkatesh Mohan and Lyn, Dennis A; civil engineering, from Indiana Department of Transportation, \$173,573, "Unit Hydrograph Method Refinement at Higher Resolution."

Merwade, Venkatesh Mohan; civil engineering, from University of Cincinnati, \$105,440, "C-Accel-Track A1 (Open Knowledge Network) the Urban Flooding Open Knowledge Network."

Meyer, Scott E; mechanical engineering, from Interstellar Technologies, LLC, \$136,247, "Rocket Thruster Development Testing for Interstellar."

Meyer, Scott E; mechanical engineering, from Inspace, LLC, \$40,000, "Thruster Development Testing."

Meyer, Terrence R; mechanical engineering, from Spectral Energies, LLC, \$224,809, "Spatially and Temporally Resolved Temperature and Species Concentration Measurements."

Meyer, Terrence R; Goldenstein, Christopher S; Paniagua Perez, Guillermo and Slabaugh, Carson D; mechanical engineering, aeronautics & astronautics, from Spectral Energies, LLC, \$49,957, "Ultrahigh-Bandwidth Robust Performance Diagnostics for Rotating Detonation Engines."

Meyer, Terrence R; Gunduz, Ibrahim E; Slipchenko, Mikhail N; Son, Steven F; Goldenstein, Christopher S and Bane, Sally P M; mechanical engineering, aeronautics & astronautics, from Defense Threat Reduction Agency, \$149,854, "MHz-Rate Burst-Mode Spectroscopy and Imaging of Temperature and Species in Post-Detonation Fireballs; Modification3 – Grant 13000549."

Meyer, Terrence R and Key, Nicole L; mechanical engineering, from Rolls-Royce, Inc., \$39,000, "Development of Particle Image Velocimetry (PIV) Techniques for Multistage Compressors."

Min, Byung-Cheol; computer information technology, from National Institute of Justice, \$47,131, "Cybersecurity and Safety Challenges in Autonomous Vehicles: Threats Identification and Countermeasures Development."

Mohammadi, Saeed; electrical & computer engineering, from Florida International University, \$36,464, "Field Emitter Robust Vacuum Integrated Nanoelectronics (FERVIN)." (a Discovery Park award – Birck Nanotechnology Center)

Mort, Paul R and Wassgren, Carl R; materials engineering, mechanical engineering, from Sandia National Laboratories, \$88,290, "Model-Directed Powder Flow."

Mosier, Nathan S; agricultural & biological engineering program, from Indiana Soybean Alliance, \$50,000, "Enzymatic Epoxidation of Soybean Oil for Polymer Applications."

Murawski, Matthew M; pharmaceutical practice, from Thomas M Sands, \$1,500, "Multi Sponsor – Voluntary Support."

Nagy, Zoltan; chemical engineering, from International Fine Particle Research Institute Inc, \$12,000, "IFPRI Gift."

Olek, Jan; civil engineering, from Federal Highway Administration, \$834,325, "Non Traditional and Natural Pozzolan Based Supplementary Cementitious Materials (SCMs) or Inorganic Polymers for Transportation Infrastructure."

Oliver, Haley F; Chaubey, Indrajeet; Deering, Amanda J; Ebner, Paul D; Ricker-Gilbert, Jacob E and Wang, Hui-Hui; food science, earth, atmospheric & planetary sciences, animal sciences, agricultural economics, agricultural sciences education & communication, from Agency for International Development, \$100,000, "Feed the Future Innovation Lab for Food Safety."

Pastakia, Sonak D; pharmaceutical practice, from New York University, \$13,652, "Bridging Income Generation with Group Integrated Care."

Pawley, Alice L; Zywicki, Stephanie M; Dickerson, Darryl A and Ohland, Matthew W; engineering education, curriculum & instruction, manufacturing extension partnership (MEP), from National Science Foundation, \$630,386, "Identifying Marginalization and Allying Tendencies to Transform Engineering Relationships."

Pekarek to Seleem

Pekarek, Steven D; electrical & computer engineering, from Continuous Solutions, \$75,000, “Power-Dense Electrical Rotating Machines for Propulsion and Power Generation.”

Pereira, Nielsen Ls; educational studies, from U.S. Department of Education, \$334,186, “Closing Excellence and Opportunity Gaps for Students from Traditionally Underserved Populations in Gifted Education: a Multi-Tier Systems of Support Approach.”

Peroulis, Dimitrios; electrical & computer engineering, from Landauer, \$112,034, “Microelectromechanical System (MEMS)-Scale Accumulating Radiation Sensor Program; Amendment 9; Grant 40001220.”

Pipes, R Byron and Barocio Vaca, Eduardo; materials engineering, Composites Manufacturing and Simulation Center, from Lockheed Martin Corp., \$125,000, “Materials Digital Data & Models (MDDM) for Extrusion Deposition Additive Manufacturing Process.”

Poderycki, Michael John; biomedical engineering, from U.S. Department of Health and Human Services, \$100,000, “Indiana Health Security Innovation Accelerator.” (a Discovery Park award – Bindley Bioscience Center)

Poggie, Jonathan; Jewell, Joseph S; Blaisdell, Gregory A and Schneider, Steven P; aeronautics & astronautics, from University of Dayton Research Institute, \$1,400,000, “Development of Hypersonic Vehicle Flight Test Structure.”

Pothen, Alex; computer science, from The Krell Institute, \$1,000, “Caitlin Whitter Fellowship.”

Pourpoint, Timothee L; aeronautics & astronautics, from Sandia National Laboratories, \$72,500, “Academic Alliance Laboratory Directed Research and Development (LDRD) on Hypersonic Flow Diagnostics in Low Pressure Environments.”

Pourpoint, Timothee L and Poggie, Jonathan; aeronautics & astronautics, from Sandia National Laboratories, \$100,000, “Hypersonic Wind Tunnel.”

Pyrak-Nolte, Laura J; physics & astronomy, from Sandia National Laboratories, \$272,307, “Advanced Downhole Acoustic Sensing for Wellbore Integrity.”

Raghunathan, Anand; electrical & computer engineering, from Qualcomm Incorporated, \$75,000, “Qualcomm Voluntary Support.”

Rainey, Maceo M; Education Opportunities Program, from U.S. Department of Education, \$40,000, “Education through Success.”

Ramanathan, Shriram; materials engineering, from University of California – San Diego, \$122,391, “Quantum Materials for Energy Efficient Neuromorphic Computing (Q-MEEN-C); Amendment 1; Grant 14000407.”

Ratliff, Timothy L; comparative pathobiology, from Carroll County Cancer Association, \$20,000, “Cancer Research.”

Rhoads, Jeffrey Frederick; Bolton, J Stuart; Davies, Patricia; Gonzalez, Marcial and Son, Steven F; mechanical engineering, from Air Force Research Laboratory, \$62,335, “Exploring the Thermomechanics of Energetic and Mock Energetic Composite Materials Under Quasi-Static and Near-Resonant Excitations; Modification 6; Grant 13000634.”

Richert, Brian T; animal sciences, from Administration Animal Nutrition, \$8,000, “Swine Research.”

Richmond, Douglas Scott; entomology, from Bayer Corporation, \$24,000, “Turfgrass Entomology Research.”

Richmond, Douglas Scott; entomology, from The Lawn Institute, \$2,000, “Turfgrass Entomology Research.”

Rodriguez, Natalia Maria; public health, from PHS-NIH National Cancer Institute, \$168,965, “Community-Based Participatory Design of a Human Papillomavirus (HPV) Rapid Response Research (RAPID) Diagnostic Test for Cervical Cancer Screening in South Florida.”

Sabbaghi, Arman and Cleveland, William S; statistics, from Sandia National Laboratories, \$100,000, “A Statistical Analysis and Improvements to the Tcarss Synthetic Dataset Generation Methods.”

Sadof, Clifford S; Johnson, William G; Appold, Melinda M; Beckerman, Janna L; Foster, Ricky E; Krupke, Christian H; Patton, Aaron J; Gibb, Timothy J and Hunt, Greg J; entomology, botany & plant pathology, horticulture & landscape architecture, field extension, from National Institute of Food & Agriculture, \$306,265, “Advancing Integrated Pest Management (IPM) in Indiana.”

Sadof, Clifford S; entomology, from Syngenta Crop Protection Inc., \$4,000, “Multi Sponsor.”

Sadof, Clifford S; entomology, from U.S. Forest Service, \$65,000, “Emerald Ash Borer (EAB) University: Using Web-Based Seminars Cooperatively to Provide Information About Emerald Ash Borer (EAB) and Other Invasive Forest Health Issues to Targeted Audiences.”

Sanders, Jimmie L; Education Opportunities Program, from Foundations of East Chicago, \$13,000, “Camp Leo Emerging Scholars Program.”

Sanders, Jimmie L; Education Opportunities Program, from U.S. Department of Education, \$40,000, “Educational Talent Search Program (Supplemental Funding).”

Saunders, Michael R and Coggeshall, Mark V; forestry & natural resources, from Department of the Navy, \$120,354, “Understanding Oak Regeneration and Growth Across Light and Woody Competition Gradients at Naval Support Activity Crane, Crane, Indiana.”

Schoenlein, William E; biomedical engineering, from Cook Research Incorporated, \$36,300, “Pre-Clinical Evaluation Testing Agreement Studies: POC and Sentinels.”

Schoenlein, William E; biomedical engineering, from Cook Research Incorporated, \$62,758, “Pre-Clinical Evaluation Testing Agreement Studies: CMH-NZSL and POC.”

Schoenlein, William E; biomedical engineering, from Cook Research Incorporated, \$29,325, “Pre-Clinical Evaluation Testing Agreement Studies: CMH-TBCD, CMH-TST2, and POC.”

Seigfried-Spellar, Kathryn C; Elliott, Stephen John and Rayz, Julia M; computer information technology, from U.S. Department of Justice, \$195,874, “Strengthening Investigative Tools for Technology for Combating Child Sexual Exploitation.”

Seleem, Mohamed and Flaherty, Daniel P; comparative pathobiology, medicinal chemistry & molecular pharmacology, from PHS-NIH National Institute of Allergy and Infectious Diseases, \$751,315, “Repurposing Novel Selective Drugs for Treatment and Decolonization of Vancomycin Resistant Enterococci.”

Shang to Voyles

Shang, Lizhi and **Vacca, Andrea**; agricultural & biological engineering program, from Bronson & Bratton, Inc, \$105,028, "Preliminary Analysis of a Rotary Fluid Device with Bent Cylinder Sleeves."

Shaver, Gregory M and **Wasynczuk, Oleg**; mechanical engineering, electrical & computer engineering, from Epower Engine Systems Inc, \$91,487, "Epower Engine Systems Testing Analysis and Simulation."

Shively, Gerald E; International Program in Agriculture, from Agency for International Development, \$5,100,000, "Laser Buy-IN: Applied Nutrition Research Capacity Building in Laos."

Sivasankar, Preeti Mahalakshmi, **Fujiki, Robert B** and **Huber, Jessica E**; speech, language & hearing sciences, from PHS-NIH National Institute on Deafness and Other Communication Disorders, \$32,013, "Vocal Restoration Programs after Acute Vocal Exertion."

Son, Steven F; mechanical engineering, from Northeastern University, \$80,000, "Small-Scale Characterization of Homemade Explosives (HMEs)."

Son, Steven F and **Rhoads, Jeffrey Frederick**; mechanical engineering, from U.S. Department of Defense, \$526,499, "Additive Manufacturing of Gun Propellants Using Vibration Assisted Direct Write Printing."

Sparkling, Anthony E; construction management technology, from Electri International Inc, \$9,000, "Harnessing Knowledge and Experience of Specialty Contracting Supervisors."

Stahelin, Robert V; medicinal chemistry & molecular pharmacology, from PHS-NIH Office of the Director, \$538,359, "Request of a Nikon A1R Confocal Microscope."

Staiger, Christopher J; botany & plant pathology, from Syngenta Crop Protection Inc., \$9,750, "Turfgrass Disease Research 30000924."

Stefancik, Jennifer L; field extension, from Gene B. & Marilyn Glick Foundation, \$7,367, "Helping Those in Need."

Sudhoff, Scott D; electrical & computer engineering, from McCoy Consulting, LLC, \$84,000, "Homopolar Alternating Current (AC) Electric Machinery for Naval Applications."

Suitor, J Jill; sociology, from PHS-NIH National Institute on Aging, \$755,623, "Within-Family Differences Study-Bereavement."

Taleyarkhan, Rusi P; nuclear engineering, from U.S. Department of Homeland Security, \$226,000, "High Efficiency (x2He-3), Low-Cost/High Resolution Tmfd Based Mobile-Fixed Sensors (with <\$1/cc Materials; <3%Resolution) for Detection of Shielded SNMs."

Tanamachi, Robin L and **Dawson, Daniel T**; earth, atmospheric & planetary sciences, from National Oceanographic & Atmospheric Administration, \$227,901, "VORTEX-SE: Characterization of Microphysical Processes in Potentially Tornadoic Southeast U.S. Storms via Polarimetric Radar – Disdrometer – Lightning Synthesis."

Taylor, Lynne S; industrial & physical pharmacy, from Applied Materials, \$65,000, "Impact of Surface Engineering on Allowable Strength Design (ASD) Stability."

Telenko, Darcy E P; botany & plant pathology, from Multi-Sponsored Industrials, \$4,000, "Extension Voluntary Support."

Telenko, Darcy E P; botany & plant pathology, from National Corn Growers Association, \$15,000, "National Corn Growers/Foundation for Food and Agriculture Research (FFAR) Project."

Telenko, Darcy E P; botany & plant pathology, from Pioneer Hi-Bred International, Inc., \$15,000, "Pioneer/ Foundation for Food and Agriculture Research (FFAR) Project."

Telenko, Darcy E P; botany & plant pathology, from Gowan Company, \$5,000, "Extension Voluntary Support."

Telenko, Darcy E P and **Cruz, Christian D**; botany & plant pathology, from University of Illinois at Champaign-Urbana, \$35,000, "Epidemiology and Disease Management Research in Response to the Emerging Corn Pathogen, *Phyllachora Maydis*."

Thompson, Aaron W; horticulture & landscape architecture, from U.S. Forest Service, \$96,083, "Ecobuffers: Part of the Great Lakes Restoration Initiative (GLRI) System of Solutions for Building Healthy Working Landscapes."

Thompson, David H; chemistry, from PHS-NIH National Institute of General Medical Science, \$189,496, "Development of Affinity Rod Scaffolds for Cryo-Electron Microscopic (EM) Sample Preparation."

Thompson, Michelle S; earth, atmospheric & planetary sciences, from Arctic Slope Technical Services, Inc, \$9,000, "Multi Sponsor – Voluntary Support."

Titus, Michael S; materials engineering, from UES Inc., \$53,280, "Sluggish Complex Refractory Oxides and Mixtures."

Topp, Elizabeth M; industrial & physical pharmacy, from National Institute for Innovation in Mf Bio, \$76,961, "Improving Lyophilization of Recombinant Proteins with Solid state amide hydrogen/deuterium exchange with mass spectrometric analysis (ssHDX-MS); Amendment 1; Grant 18100043."

Tuinstra, Mitchell R; **Crawford, Melba M**; **Cherkauer, Keith A**; **Delp, Edward J**; **Ebert, David S**; **Habib, Ayman F** and **Weil, Clifford F**; agronomy, agricultural & biological engineering program, electrical & computer engineering, civil engineering, from Advanced Res Projects Agency – Energy, \$2,349,734, "Automated Sorghum Phenotyping and Trait Development Platform."

Uyeda, Christopher H; chemistry, from National Institutes of Health, \$127,569, "Transition Metal Catalyzed Reductive Carbene Transfer Reactions."

Vacca, Andrea; agricultural & biological engineering program, from Parker Hannifin Corp., \$77,150, "Simulation of Crescent-Type Internal Gear Pumps."

Van Der Mensbrugge, Dominique Y; agricultural economics, from U.S. Department of Commerce, \$36,907, "Development and Transfer of Wisconsin National Data Consortium (WiNDC) Computable general equilibrium (CGE) Model of the United States Department of Commerce."

Varma, Amit H and **Seo, Jungil**; civil engineering, from Kepco Engineering & Construction Co, Inc, \$38,000, "Tension Strength of Embed Plates with Welded Deformed Reinforcing Bars as Governed by Concrete Breakout."

Voyles, Richard M; engineering technology, from National Science Foundation, \$65,000, "Collaborative Research: Industry/University Cooperative Research Centers Program (I/UCRC) for Robots and Sensors for the Human Well-Being."

Voyles, Richard M; engineering technology, from Alltech, Inc, \$15,000, "Robots and Sensors for the Human Well-Being (RoSe-HUB) Membership (Members Cost Shared on 107355)."

Wang to Zimpfer

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

Wang, Haifeng; aeronautics & astronautics, from Honeywell Inc., \$118,686, “Development and Assessment of Kerosene Global Reaction Model and Reduced-Order Turbulence-Chemistry Model for Carbon Monoxide (CO) and Unburned Hydrocarbon (UHC) Emission Predictions Under Honeywell Aircraft Engine Conditions.”

Wang, Xiaoming; engineering technology, from Trask Trust Fund, \$12,000, “Additive Manufacture of High Strength Aluminum Metal Matrix Composites.”

Wang, Xiaoming; engineering technology, from Fiat Chrysler Automobiles, \$200,000, “Advanced Casting Rework.”

Wassgren, Carl R; mechanical engineering, from Procter & Gamble Company, \$10,000, “P and G Voluntary Support.”

Webb, Kevin J; electrical & computer engineering, from Sandia National Laboratories, \$73,575, “Laboratory Directed Research and Development (LDRD) Computational Imaging for Intelligence in Highly Scattering Aerosols.”

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

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

Weibel, Justin A and Marconnet, Amy M; mechanical engineering, from Semiconductor Research Corporation, \$48,794, “Evaluation of Strategies for Vapor Chamber Integration into Heterogeneous System-in-Package Architectures for Hot-Spot Damping.”

Weibel, Justin A; mechanical engineering, from Murata Manufacturing Co. Ltd, \$30,000, “Cooling Technologies Research Center (CTRC).”

Weibel, Justin A; mechanical engineering, from 3M General Offices, \$30,000, “Cooling Technologies Research Center (CTRC) (40001184).”

Weiner, Andrew M; electrical & computer engineering, from Oak Ridge National Laboratory, \$1,707, “A Quantum Interconnect for Matter Qubits Based on Frequency Encoded Photonic Qubits.”

Wharry, Janelle P; nuclear engineering, from U.S. Department of Energy, \$500,000, “Irradiation Studies on Electron Beam Welded PM-HIP Pressure Vessel Steel.”

Williams, Rod N; forestry & natural resources, from Kedzierski, Gregory or Wendy, \$150, “Voluntary Support 30001193.”

Xiang, Chong and Farrokhi, Farid; economics, from Copenhagen Business School, \$18,963, “Trade and the Distribution of Welfare: an Empirical Approach.”

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

Yih, Yuehwern; industrial engineering, from Agency for International Development, \$5,120,000, “Laser Buy-In: Cultural Restoration Program for Northern Iraq.”

Young, Bryan G and Johnson, William G; botany & plant pathology, from United Soybean Board, \$640,000, “Integrating Best Management Practices for Weeds with Multiple Herbicide Resistance in Soybean Production Systems (FY20).”

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

Young, Bryan G; botany & plant pathology, from Keyplex, \$3,200, “Weed Science Research Voluntary Support.”

Young, Bryan G; Johnson, William G and Widhalm, Joshua R; botany & plant pathology, horticulture & landscape architecture, from United Soybean Board, \$461,000, “Deconstructing Off-Target Movement of Auxin Herbicides (FY20).”

Yu, Wenbin; aeronautics & astronautics, from MSC Software, \$15,000, “Composites Design and Manufacturing (CDM) HUB (Consortium).”

Zhang, Song; mechanical engineering, from National Institute of Justice, \$823,804, “Development of Dual-Resolution 3-D Imaging Device and Software Tools for Shoe and Tire Impression Evidence Collection, Visualization, and Recognition.”

Zhao, Kejie; mechanical engineering, from Oak Ridge National Laboratory, \$55,852, “Novel Liquid/Oligomer Hybrid Electrolyte with High Li Ion Transference Number (Hi-LiT) for Extreme Fast Charging.”

Zhou, Chenn Qian and Chen, Bin; Center for Innovation through Visualization and Simulation, electrical & computer engineering, from Association for Iron and Steel, \$20,000, “Smart Ladle: Artificial Intelligence (AI)-Baesd Tool for Optimizing Casting Temperature.”

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

Zimpfer, Mark D; construction management technology, from Builders Bridge, \$20,000, “Multi Sponsor – Voluntary Support.” ■

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