

**21st Century** *Research and  
Technology* **Fund**  
**SBIR/STTR Matching Awards**

**21**  
**FUND**



## **Adiabatics**

Columbus

Project Title: Development of Endurable Thermal Barrier Coatings for Diesel Engine Specific Heat Reduction

Granting Agency: Department of Defense/Army

Project Title: Low Temperature Limits for Gas Turbine Engine Oils

Granting Agency: Department of Defense/Air Force

## **Advanced Science and Automation**

Indianapolis

Project Title: Advanced Virtual Manufacturing Lab for Research, Training, and Education

Granting Agency: National Science Foundation

Project Title: Visualization Tool for Animating Combined Multibody Dynamics and Computational Fluid Dynamics Simulations

Granting Agency: Department of Defense/Army

Project Title: Virtual Learning Environment for University Physics

Granting Agency: National Science Foundation

## **Aeon Imaging**

Bloomington

Project Title: Low Cost Device for Detection of Retinal Disease

Granting Agency: National Institutes of Health

Project Title: System for Increasing Patient Access to Eye Exams for Diabetic Retinopathy

Granting Agency: National Eye Institute/National Institute of Diabetes and Digestive and Kidney Diseases

## **Agri Processing**

Carmel

Project Title: Diversion from Land Application of Nutrients Recovered from Non-MPP Processing Plant Wastewater to Value-Added Use in Multi-Species Feed Ration

Granting Agency: United States Department of Agriculture

## **Akina, Inc.**

West Lafayette

Project Title: Delayed Hydrogel Tissue Expander

Granting Agency: National Institutes of Health

Project Title: Elastic Biodegradable Ureteral Stent

Granting Agency: National Institutes of Health/National Institute of Diabetes and Digestive and Kidney Diseases

**Anabas, Inc.**

Bloomington

Project Title: Information Management

Granting Agency: Department of Defense/Air Force

**Analytical Engineering, Inc.**

Columbus

Project Title: Development of Endurable Thermal Barrier Coatings for Diesel Engine Specific Heat Reduction

Granting Agency: Department of Defense/Army

Project Title: JP-8 Fuel Effects on High Pressure Common Rail Pumps

Granting Agency: Department of Defense/Army

**Anderson Tool and Engineering Company, Inc.**

Anderson

Project Title: Controlled Dynamic Radiant Oven

Granting Agency: Department of Agriculture

**ApeX Therapeutics, Inc.**

Indianapolis

Project Title: Redox Protein APE1/Ref-1 as a Target for Age-Related Macular Degeneration (AMD)

Granting Agency: National Institutes of Health/Department of Health and Human Services/National Eye Institute

**Arxan Technologies, Inc.**

West Lafayette

Project Title: Automatically Protecting Software against "diff" Attacks

Granting Agency: Office of the Secretary of Defense/Office of the Secretary of Defense

Project Title: Automated Tool for Software Protection Technology Insertion

Granting Agency: Department of Defense/Air Force

Project Title: Non-Performance Degrading Software Protection for Real-Time Processes

Granting Agency: Department of Defense/Missile Defense Agency

Project Title: Secure Software Rental and Subscription System

Granting Agency: National Science Foundation

Project Title: Security Amplification through Data-Splitting: Achieving High Security using Moderately Secure Hardware  
Granting Agency: Department of Defense/Army

## **Phase II**

Project Title: Non-Performance Degrading Software Protection for Real-Time Processes  
Granting Agency: Department of Defense/Missile Defense Agency

Project Title: Advanced Object Code Protection  
Granting Agency: Department of Defense/Air Force

## **Ash Access Technology, Inc.**

Lafayette

Project Title: MethLock vs. Heparin as Dialysis Catheter Lock  
Granting Agency: National Institutes of Health

## **Batch Process Technologies**

West Lafayette

Project Title: New Concepts in Multicomponent Batch Distillation for Higher Productivity, Waste and Energy Reduction  
Granting Agency: National Science Foundation

## **Bioanalytical Systems, Inc**

West Lafayette

Project Title: Movement Responsive Cage for Simultaneous Pharmacology Studies in MiniPigs  
Granting Agency: National Center for Research Resources

## **BioVitesse, Inc.**

West Lafayette

Project Title: SBIR Phase I: Rapid Detection of Bacterial Contaminants Using Micro-fluidic Biochips  
Granting Agency: National Science Foundation/Biotechnology/Biochip

## **BL Healthcare, Inc.**

Indianapolis

Project Title: Broadband-Based Television Portal for Diabetes Self-Care  
Granting Agency: National Institutes of Health

Project Title: TV-Based Self-Management Platform for Children with Asthma  
Granting Agency: National Institutes of Health

**CAE-net**

Carmel

Project Title: Developing New Insensitive Munitions Packaging Solutions for Missile Defense

Granting Agency: Naval Surface Warfare Center (Crane)

Project Title: Advanced Development for Defense Science and Technology,

Blast and Impact Resistance of Metallic and Non-Metallic Composite Materials

Granting Agency: Department of Defense

**Candent Technologies, Inc.**

Indianapolis

Project Title: Advanced High Pressure Ratio Low Cost Turbine Engine

Granting Agency: Department of Defense/Army

Project Title: New Generation Gas Turbine for Small Boat Propulsion

Granting Agency: Department of Defense/Navy

**ChalkLabs**

Bloomington

Project Title: Portfolio Analysis and Biomedical Research Data

Granting Agency: National Institutes of Health

**Communication Disorders Technology, Inc.**

Bloomington

Project Title: Automatic Evaluation of Speech Quality

Granting Agency: National Institutes of Health

**Computelligence, LLC**

Indianapolis

Project Title: Cognitive Models for Learning to Control Dynamic Systems

Granting Agency: Department of Defense/Air Force

**Conflicts Kinetics**

Crown Point

Project Title: Advanced Development for Defense Science and Technology

Granting Agency: Department of Defense/Air Force

**Coping Steps, LLC**

Indianapolis

Project Title: Web-based Simulations to Help Youths Cope When a Parent or Sibling has a Traumatic Brain Injury

Granting Agency: Centers for Disease Control and Prevention/National Center for Injury Prevention and Control

### **CreateAbility Concepts, Inc.**

Brownsburg

Project Title: SSIMPLE- a Speech & Switch Input Mobile Phone that Links Everyone

Granting Agency: Department of Education

Project Title: Talking Tags - Fast Identification of Objects & Locations for Individuals with Visual Impairments

Granting Agency: Department of Education

Project Title: SoundAlert-A Centralized System Capable of Alerting People Who Are Deaf or Hearing Impaired of Critical Sounds in Their Environment

Granting Agency: Dept of Education

Project Title: Hearing Companion - Handheld Portable Sound Identification and Critical Alerting Functionality for People Who are Deaf or Have Hearing Loss

Granting Agency: Department of Education

Project Title: Sound Compass- A Wearable Sound Direction and Motion Detector for People Who are Deaf or Hard of Hearing

Granting Agency: Department of Education

Project Title: VisionARI – Vision Assisting Resources for Independence in Finding and Identifying Objects and Navigating Environments for People Who are Blind or Visually Impaired

Granting Agency: Department of Education/National Institute on Disability and Rehabilitation Research

### **Phase II**

Project Title: The SoundAlert Person-Centered Prompting System

Granting Agency: Department of Education

### **Criterion Health**

Terre Haute

Project Title: SSIMPLE- LifterMate: Assistive Technology for Wheelchair-toilet-bathtub-bed Transfers

Granting Agency: National Institutes of Health

Project Title: Variable Position Mid-Wheel Drive System for Power Wheelchairs

Granting Agency: Department of Education/National Institute for Disability and Rehabilitation Research

**Defense Life Sciences, LLC (Purdue)**

West Lafayette

Project Title: Tactical Biorefinery for Forward Fuel Production

Granting Agency: Department of Defense/Army

**Enabling Energy Systems, Inc.**

Crown Point

Project Title: Electrostatic Atomizing Fuel Injector for Small Scale Engines

Granting Agency: Department of Defense/Army

**EndGenitor Technologies, Inc.**

Indianapolis

Project Title: Core Blood Stem Cell Expansion Ex Vivo with Endothelial Progenitor Cells

Granting Agency: National Institutes of Health

**Endocyte, Inc**

West Lafayette

Project Title: Folated Targeted Delivery of a CDKI

Granting Agency: National Institutes of Health/National Cancer Institute

**Engine Research Associates, Inc.**

Fort Wayne

Project Title: Integrated Power Generation for Small Unmanned Vehicles

Granting Agency: Department of Defense/Air Force

Project Title: Small Engines Designed for High Efficiency, High Power Density and Quiet Operations

Granting Agency: Department of Defense/Army/AMCOM

**En'Urga, Inc.**

West Lafayette

Project Title: Industrial Process Tomography for Turbulent Pipe Flows

Granting Agency: National Science Foundation

Project Title: Innovative Instrumentation and Intelligent Diagnostic System for Reactor Safety

Granting Agency: Department of Energy

Project Title: Liquid Rocket Engine Heat Transfer Tools

Granting Agency: Department of Defense/Air Force

Project Title: A Fire Detector for Monitoring Inaccessible Areas in Aircrafts

Granting Agency: National Aeronautics and Space Administration

Project Title: Electromagnetic Flowmeter with Built-in Electrical Impedance Tomography for Multiphase Flow

Granting Agency: National Science Foundation

Project Title: Line Scan X-Ray Tomography for In Cylinder Diagnosis

Granting Agency: National Science Foundation

Project Title: Experimental Characterization of Particle Dynamics Within Solid Rocket Motors

Granting Agency: Department of Defense/Air Force

Project Title: A Miniature Non-Contact Rail Temperature Sensor

Granting Agency: Department of Transportation

Project Title: Visual Information Delivery Robot for Visually Impaired Children

Granting Agency: National Science Foundation

Project Title: Three-Phase Flow-metering System for Oil Industry

Granting Agency: National Science Foundation

## **Fast Diagnostics**

Indianapolis

Project Title: Non-Invasive Optical Determination of GFR

Granting Agency: National Institutes of Health

## **Fiji Systems, LLC**

Indianapolis

Project Title: Low-Power Real-Time Java for Mission-Critical Systems

Granting Agency: National Science Foundation

## **Focus Surgery**

Indianapolis

Project Title: Robotic High Intensity Focused Ultrasound (HIFU) Manipulator System for Critical Systems for Trauma and Transport

Granting Agency: Department of Defense/Army

Project Title: HIFU & Immunotherapy Treatment of Metastatic Prostate Cancer

Granting Agency: National Institutes of Health, NCI, Dept of Health & Human Services

## **Foresite, Inc.**

Kokomo

Project Title: Tin Whisker Mitigation Technologies for Sn-Based Surface Finishes on Electronic

Assemblies and Microelectronic Devices

Granting Agency: Department of Defense/Missile Defense Agency

**Gabriel Interactive, Inc.**

Indianapolis

Project Title: An Anti-Smoking Video Game for Pre-Adolescent Girls

Granting Agency: National Cancer Institute

Project Title: An Anti-Smoking Video Game for Pre-Adolescent Girls

Granting Agency: National Cancer Institute

**General BioTechnology, LLC**

Indianapolis

Project Title: Novel Self-Nucleating Cryostorage Devices

Granting Agency: National Institutes of Health/National Institute of Child and Human Development

Project Title: Automated Closed System for DMSO Removal from Peripheral Blood Stem Cells

Granting Agency: National Institutes of Health/NHLBI

Project Title: A Novel Approach to GMP Production, Cryopreservation and Distribution of Tool Derived Stem Cells

Granting Agency: National Institutes of Health/National Center for Research Resources

Project Title: A Novel Device Design for Sperm Cryopreservation

Granting Agency: National Institutes of Health/National Center for Research Resources

**Phase II**

Project Title: Automated Closed System for DMSO Removal from PBSC's

Granting Agency: National Institutes of Health

**General Resource Technology, Inc.**

West Lafayette

Project Title: Production of Spores of Cellotrichum Truncatum as Biological Control Agents by Solid Phase Fermentation

Granting Agency: Department of Agriculture

**GFT Corporation**

Pennville

Project Title: Radiation Abating Highly Flexible Multifunctional Polyimide Cryogenic & Thermal Insulation

Granting Agency: National Aeronautics and Space Administration

Project Title: Highly Flexible and Extremely Durable Polyimide Cryogenic Insulation  
Granting Agency: National Aeronautics and Space Administration

**GH, LLC.**

West Lafayette

Project Title: STTR Phase I: Providing Access to Science and Math for Disabled Students Using MathSpeak

Granting Agency: National Science Foundation

**Granger Engineering, LLC**

Granger

Project Title: Variable Diameter Fiber Reinforced Biopolymers for Minimally Invasive Orthopedic Implants

Granting Agency: National Science Foundation

**Phase II**

Project Title: Commercialization of a Fiber Reinforced Bone Cement

Granting Agency: National Science Foundation

**Griffin Analytical Technologies, Inc.**

West Lafayette

Project Title: Field Chemical Analysis Tool (FCAT)

Granting Agency: U.S. Marine Corps – through the U.S. Navy

Project Title: Miniature Mass Spectrometer for Expired Breath Analysis

Granting Agency: National Science Foundation

Project Title: Miniature Mass Spectrometer for Liquids Analysis

Granting Agency: National Science Foundation

**Hans Tech**

West Lafayette

Project Title: Fabrication of Aluminum Matrix Nanocomposites

Granting Agency: National Science Foundation

Project Title: USV-Grain Refining

Granting Agency: National Science Foundation

Project Title: Reinforcement of Lightweight Material Castings with Dissimilar Metals

Granting Agency: National Science Foundation

**Hawthorne Mushroom Farms, Inc**

Montgomery

Project Title: Creating Sustainability of Mushroom Production in U.S. Rural Areas  
Granting Agency: U. S. Department of Agriculture

Project Title: Increasing the Marketing, Distributing, and Selling Channels of Specialty Mushrooms  
Granting Agency: U. S. Department of Agriculture

### **HemoCleanse, Inc.**

Lafayette

Project Title: Pheresis Treatment of Bioterrorism-Induced Sepsis  
Granting Agency: National Institutes of Health/NIAID

### **High Assurance Systems**

West Lafayette

Project Title: A Multimedia Surveillance Networking System Using Foveation Technology  
Granting Agency: Homeland Security Advanced Research Projects

### **IBC Materials & Technology**

Lebanon

Project Title: Fretting Wear Elimination in Gear Box Housings  
Granting Agency: Department of Defense/Air Force

Project Title: Fretting Wear Elimination for Titanium Components  
Granting Agency: Department of Defense/Air Force

Project Title: Optimized Corrosion Resistant Bearing & Gear Steel Thermal Processing  
Granting Agency: Department of Defense/Navy

### **Phase II**

Project Title: Fretting Wear Elimination in Gear Box Housings  
Granting Agency: Department of Defense/Air Force

### **Imaginestics, LLC**

West Lafayette

Project Title: Rapid Application Development Architecture for Product, Process and Cost Configuration across Manufacturing Verticals  
Granting Agency: National Science Foundation

Project Title: Supply Chain Optimization and Product Explorer  
Granting Agency: National Science Foundation

Project Title: Development of an Intelligent Design Information Management System  
Granting Agency: Department of Defense/Army

Project Title: Advanced Technologies for Discrete-Parts Manufacturing  
Granting Agency: Department of Defense/Defense Logistics Agency

### **Independence Science, LLC**

West Lafayette

Project Title: STEM Education for Students Who Are Blind or Print Disabled the the Development of the First Talking Pocket Size Scientific Data Collection Device  
Granting Agency: National Science Foundation

### **Indiana Labs, LLC**

Bloomington

Project Title: Prosthesis to Mitigate Erectile Dysfunction  
Granting Agency: National Institute for Diabetes and Digestive and Kidney Diseases, National Institutes of Health

### **Indiana Nanotech**

Indianapolis

Project Title: Development of a Calcium-Phosphate Nanocomplex Fluoride-Based Mouthrinse  
Granting Agency: National Institutes of Dental and Craniofacial Research

Project Title: Development of a Niobium Oxide as a Potential Coating for Dental and Orthopedic Implants  
Granting Agency: National Institutes of Health/National Institutes of Dental and Craniofacial Research

### **Information in Place, Inc.**

Bloomington

Project Title: Embedded Training for Objective Force Warrior  
Granting Agency: Department of Defense/Army

Project Title: Military and Civilian Air Traffic Management Information Exchange and Visualization  
Granting Agency: Department of Defense/Air Force

Project Title: HAZMAT Training Using a Problem-Based Methodology and Serious Games Approach  
Granting Agency: National Institutes of Health/NIEHS/Worker Education and Training Program

Project Title: Conventional Training Versus Game-Based Training  
Granting Agency: Department of Defense/Navy

Project Title: Developing a Commercial Video Game for Tweens to Support Complex Systems Thinking

Granting Agency: National Science Foundation

Project Title: Viyant Hazmat Skilled Support Personnel Just in Place Performance Support

Granting Agency: National Institutes of Health

Project Title: Micro-Games for WMD Training for SSPs

Granting Agency: National Institutes of Health/National Institute of Environmental Health Sciences/Worker Education and Training Program

Project Title: Innovative Training Technology for Preventive Rad/Nuc Detection

Granting Agency: Department of Homeland Security

## **Phase II**

Project Title: SBIR Phase II: Development a Commercial Video Game for Tweens to Support Complex Systems Thinking

Granting Agency: National Science Foundation

## **Innovative Design & Technology**

West Lafayette

Project Title: Microelectrical Devices for the Health Monitoring of Nonstructural Materials

Granting Agency: Department of Defense/Air Force

## **Innovative Energy Solution, Inc.**

Crown Point

Project Title: Plasma Assisted Reformation of Hydrogen Sulfide to Hydrogen and Sulfur

Granting Agency: National Science Foundation

Project Title: Comprehensive JP-8 Mechanism for Vitiated Flows

Granting Agency: Department of Defense/Air Force

Project Title: Hydrogen from Refinery Wastes Via Superadiabatic Autothermal Reformation

Granting Agency: Department of Energy

Project Title: Ultra-Compact Entrained Flow/Plasma Solid Fuel Gasifier

Granting Agency: Department of Energy/Office of Science

Project Title: Compact Plasma Reformer for Waste to Energy Conversion

Granting Agency: Department of Defense/Army/Development and Engineering Command

Project Title: Reducing Energy & Carbon Intensity in Oil Refining

Granting Agency: Department of Energy/Office of Science

## **Inphoton**

Indianapolis

Project Title: Kidney Multiphonton Analysis of therapeutic Agents  
Granting Agency: National Institutes of Health

**Insects Limited, Inc.**

Westfield

Project Title: Development of Real-time Whole-Organism Biosensor System for use In Post Harvest, Structural, and Quarantine Fumigations  
Granting Agency: United States Department of Agriculture

**IN Space, LLC**

West Lafayette

Project Title: Thermal Decomposer for Peroxide  
Granting Agency: Department of Defense/Missile Defense Agency

Project Title: Hypergolic Swirl Injectors for Advanced Divert and Attitude Control  
Granting Agency: Department of Defense/Missile Defense Agency

Project Title: Novel Binder for IM-Compliant Solid Rocket Motors  
Granting Agency: Missile Defense Agency

Project Title: Combustion Stability Innovations for Liquid Rocket Engines  
Granting Agency: Department of Defense/Air Force/Office of Scientific Research

Project Title: Innovative Swirl Injector for LOX and Hydrocarbon  
Granting Agency: National Aeronautics and Space Administration

Project Title: Variable Thrust, Multiple Start Hybrid Motor Solutions for Missile and Space Applications  
Granting Agency: Department of Defense/Air Force

Project Title: Vapor Containment and Fire Suppression System for Hypergolic Propellants  
Granting Agency: Department of Defense/Missile Defense Agency

Project Title: Design Tools for Combustion Stability  
Granting Agency: Department of Defense/Air Force

**Jabiru Software & Services**

West Lafayette

Project Title: Efficient Radiation Simulation in Complex Geometries with Applications to Planetary Entry  
Granting Agency: National Aeronautics and Space Administration

Project Title: Sensitivity-Based Simulation Software fro Optimization of Turbine Blade Cooling

Strategies

Granting Agency: National Aeronautics and Space Administration

### **Kinetic Art and Technology Corporation**

Greenville

Project Title: Application of Electromagnetic Arrays to High Efficiency, High Bandwidth, Redundant Linear Actuators

Granting Agency: National Aeronautics and Space Administration

### **Phase II**

Project Title: Commercialization of an Advanced Electronic Motor controller Optimized for SEMA Motor Technology

Granting Agency: National Aeronautics and Space Administration

### **Kylin Therapeutics, Inc.**

West Lafayette

Project Title: pRNA Nanoparticles for Therapeutic Use

Granting Agency: National Institutes of Health/National Institute of General Medical Sciences

### **LewTech Company, Inc.**

Fort Wayne

Project Title: Distributed Buoy Vessel Detection System

Granting Agency: Dept of Interior & HSARPA

Project Title: Low Drag Underwater Acoustic Source for Sea Surface Based Mine Sweeping

Granting Agency: Office of Naval Research

Project Title: Ocean Energy Extraction for Sensor Applications

Granting Agency: Office of Naval Research

Project Title: reliable Acoustic Path Vertical Line Array

Granting Agency: Department of Defense/Navy

Project Title: Innovative Undersea Sensors Using Relaxor Piezoelectric Single Crystals

Granting Agency: Naval Sea Logistics Center

Project Title: Single Crystal Transducer Technology for Undersea Tracking Ranges

Granting Agency: Naval Air Warfare Center for Naval Undersea Warfare Center

### **Life Machines Corporation**

West Lafayette

Project Title: Rotary Wing UAV for Bomb Impact Assessment within an Urban Environment

Granting Agency: Department of Defense/Air Force

Project Title: Rotary-Wing UAV as On-Demand Sensor Platform for Aircraft Operators  
Granting Agency: Department of Defense/SOCOM

Project Title: Tube-Launched Rotary Wing UAV for Remote Surveillance Operations  
Granting Agency: Department of Defense/Navy

### **Logical Semantics, Inc.**

Indianapolis

Project Title: Advanced Medical Speech Recognition  
Granting Agency: National Institutes of Health

Project Title: Extracting Semantic Knowledge from Clinical Data Sources  
Granting Agency: National Institutes of Health

### **M4 Sciences, LLC**

West Lafayette

Project Title: Modulation-Assisted Deep-Hole Drilling of Micro/Meso-Scale Biomedical Components  
Granting Agency: National Science Foundation

Project Title: Large-Scale Production of Non-Ferrous Metal Fibers by Modulation-Assisted Machining  
Granting Agency: National Science Foundation

### **Phase II**

Project Title: NSF STTR Phase II: Modulation-Assisted Deep-Hole Drilling of Micro/Meso-Scale Biomedical Components  
Granting Agency: National Science Foundation

### **Magnetic Power Motion, LLC**

Floyds Knobs

Project Title: High Thrust, Integrated Roller-Screw Actuator Using High Performance Notched-Ribbon Motor Technology  
Granting Agency: Department of Defense/Navy

### **Materials Innovation Technologies, LLC**

Fort Wayne

Project Title: Low Cost Carbon Fiber Composites for Lightweight Vehicle Parts  
Granting Agency: Department of Energy

### **Medical Decision Modeling, Inc.**

Indianapolis

Project Title: ACGME Duty Hour Compliance: Simulation Analysis of Medical Resident Scheduling

Granting Agency: National Institutes of Health

Project Title: Discrete Event simulation of Mental Health Disorders in Medicaid Populations

Granting Agency: National Institutes of Health

**Metrolaser, Inc.**

West Lafayette

Project Title: High-Resolution Evanescent PIV for Near-Wall Microfluidics

Granting Agency: Department of Defense/Air Force Research Laboratory (AFRL)

**Microtech, Inc.**

Indianapolis

Project Title: Hybrid CMOS/Nanodevice Integrated Circuits

Granting Agency: Department of Defense/Air Force

**MNB Technologies**

Bloomington

Project Title: Secure Processors

Granting Agency: Department of Defense/Army-Aviation & Missile Command

Project Title: Supercomputing in a Laptop Environment

Granting Agency: Department of Defense/Navy

Project Title: Algorithms for reconfigurable computing Architectures

Granting Agency: Department of Defense/Air Force

Project Title: Full Multiplex Holographic Display

Granting Agency: Department of Defense/Air Force

Project Title: Advanced Real-Time Imagery Fusion for Targeting and Mission Planning Using Volumetric Display

Granting Agency: Department of Defense/Navy

**Moerae Matrix**

West Lafayette

Project Title: Peptide Therapeutics for Inhibiting Abdominal Adhesions

Granting Agency: National Cancer Institute

**Molecular Kinetics, Inc.**

## Indianapolis

Project Title: Computational and Experimental Tool for Cancer Protein  
Granting Agency: National Cancer Institute

Project Title: Cancer Drug Discovery Using Disordered Protein Targets  
Granting Agency: National Cancer Institute

Project Title: Tools to Accelerate Protein Structure Determination  
Granting Agency: National Institute of General Medical Sciences

Project Title: A New Cancer Solubility Tool: Entropic Bristle  
Granting Agency: National Institutes of Health

Project Title: PiFish: A Novel Approach for Discovering Druggable Site in Cancer Proteins  
Granting Agency: National Cancer Institute

Project Title: Cardiovascular Drug Target Identification via Disordered Protein Analysis Focus  
Granting Agency: National Institutes of Health

Project Title: A New Technology for Functional Solubilization of Kinases  
Granting Agency: National Institutes of Health

## **Mudawar Thermal Systems, Inc.**

West Lafayette

Project Title: Phase-Changing Cooling of Operational (Weapons) Environment  
Granting Agency: Office of the Secretary of Defense (OSD) – through the U.S. Air Force

Project Title: Modeling Tools for Two-Phase Electronics Cooling Systems  
Granting Agency: Department of Defense/Navy

Project Title: Modeling Tools for Two-Phase Electronics Cooling Systems  
Granting Agency: Department of Defense/Navy

Project Title: Cooling Technology for JTRS Ground Mobile Radio (GMR)  
Granting Agency: Department of Defense/Navy

## **Nesch, LLC**

Crown Point

Project Title: Large-Area X-Ray Diffraction Crystal Optics  
Granting Agency: National Institutes of Health

Project Title: A Novel High-Intensity Area X-Ray Source  
Granting Agency: National Institutes of Health

Project Title: Diffraction Enhanced Imaging Laboratory Research Machine

Granting Agency: National Institutes of Health

Project Title: Complementary Non-Destructive Evaluation (NDE)/Testing (NDT) Techniques for Stockpile Reliability Programs (SRP) of US Army Tactical Missile Systems

Granting Agency: Department of Defense/Army

Project Title: Large-area X-Ray Diffraction Crystal Optics

Granting Agency: National Institutes of Health/National Institute of Biomedical Imaging and Bioengineering

### **Next Wave Systems, LLC**

Crown Point

Project Title: Rosetta Phone

Granting Agency: Defense Advanced Research Projects Agency

### **Odysian Technology, LLC**

Mishawaka

Project Title: Multifunctional Structures with Structurally Integrated Circuitry for Use on the Airborne Laser (ABL)

Granting Agency: Department of Defense/Missile Defense Agency

Project Title: Structurally Integrated Hybrid Battery for Improved Performance of Small Unmanned Aerial Vehicles (SUAV)

Granting Agency: Department of Defense/Air Force Research Laboratory (AFRL)

Project Title: Improved Reliability and Productibility of Ballistic Missile Defense Systems through Highly Controlled Deposition of Critical Battery Components

Granting Agency: Department of Defense/Air Force Research Laboratory (AFRL)

Project Title: Advanced Distribution and Control for Hybrid Intelligent Power Systems

Granting Agency: Department of Defense/Army

Project Title: Structurally Embedded Power and Signal Cabling for Air Vehicles

Granting Agency: Department of Defense/Air Force

Project Title: New In-field Composite Repair Techniques for Transmission or Distribution Pipelines

Granting Agency: Department of Transportation

### **Omega Wireless Solutions, Inc.**

West Lafayette

Project Title: Interference Rejecting Receiver for Satcom Systems (IRRSS)

Granting Agency: Space and Naval Warfare Systems Command

Project Title: Vertically Integrated Advanced Microwave Package

Granting Agency: Department of Defense/NAVAIR

Project Title: Advance Tunable Integrated Diplexer (ATID)

Granting Agency: Department of Defense/Army

### **Optical Therapeutic Technologies**

West Lafayette

Project Title: In Vivo Optical Imaging of Chemically Targeted Tumor Tissue

Granting Agency: National Institutes of Health/National Cancer Institute

### **OptoSonics, Inc.**

Indianapolis

Project Title: 3-D Thermoacoustic Computed Tomography for Molecular Imaging

Granting Agency: National Institutes of Health/National Cancer Institute

Project Title: Optical Tomography for Cardiac Imaging of Small Animals

Granting Agency: National Institutes of Health/Heart and Lung

Project Title: In-vivo Thermo-acoustic Imaging of HER2 Status

Granting Agency: National Institutes of Health/Department of Health and Human Services

Project Title: HYPER - Spectral PCT for Preclinical Molecular Imaging

Granting Agency: National Institutes of Health

### **OSCAR, Inc.**

Fishers

Project Title: Development of Force Based Orthodontic Appliances

Granting Agency: National Institutes of Health

### **PartTec, Ltd.**

Bloomington

Project Title: Instrument Probes for Properties of Nanostructures in Polymer Matrices

Granting Agency: Department of Defense/Army

Project Title: Neutron Detector System Using Cross Fiber Scintillators

Granting Agency: Department of Energy

Project Title: Improved Neutron Scintillators Based on Nanomaterials

Granting Agency: Department of Energy

Project Title: Next Generation Neutron Scintillators Based on Semiconductor Nanostructures

Granting Agency: Department of Energy

Project Title: The Spiral Detector for High Flux Neutron Beams

Granting Agency: Department of Energy

Project Title: Dose Imaging Detectors for Radiotherapy Based on Gas Electron Multipliers  
Granting Agency: National Institutes of Health/National Cancer Institute

**PC Krause and Associates, Inc.**

West Lafayette

Project Title: Aero Propulsion and Power  
Granting Agency: Department of Defense/Air Force

Project Title: Virtual Prototyping Vehicle Electrical System Management Design Tool  
Granting Agency: Department of Defense/Army

Project Title: Integrated Simulation/Design/Analysis Infrastructure for SiC-Based High-Temperature Power Conversion  
Granting Agency: Department of Defense/Air Force

Project Title: A Noninvasive Sensor/Control Suite for Health Monitoring and Extended Life of Aircraft Generation Systems  
Granting Agency: Department of Defense/Navy

Project Title: Design, Analysis, and Optimization Environment for Directed Energy Systems  
Granting Agency: Department of Defense/Air Force

Project Title: Optimization of Stator Tooth Geometry and Magnetic Materials Properties for Enhanced Torque Production in Electric Machines  
Granting Agency: Department of Defense/Air Force

Project Title: Transient Electrical Power Response Enhancement for Turbine Driven Generators  
Granting Agency: Department of Defense/Office of Naval Research

Project Title: F-35 Three-Bearing Swivel Nozzle (3BSN) Door Actuator  
Granting Agency: NAVAIR

Project Title: Affordable Unmanned Underwater Vehicle (UUV) Power System Architecture  
Granting Agency: Department of Defense/Office of Naval Research

**PhycoBiologics, Inc**

Bloomington

Project Title: Novel Algaecide for Control of Off-Flavor in Catfish Ponds  
Granting Agency: Department of Agriculture

**Phycotransgenics, LLC**

Bloomington

Project Title: Development of Microalgal-Based Oral Vaccine Delivery System for Poultry  
Granting Agency: Department of Agriculture

Project Title: Microalgal Oral Vaccines for Control of Ambiasis  
Granting Agency: National Institutes of Health

### **Piezo Technologies**

Indianapolis

Project Title: Ultrasonic Ablation of Barrett's Esophagus  
Granting Agency: National Institutes of Health/National Cancer Institute

### **PowerHouse Proteomic Systems, LLC**

Zionsville

Project Title: A Novel Approach for Real-Time Proteomics in Live Cells  
Granting Agency: National Institutes of Health/National Center for Research Resources

### **PreClinOmics, Inc**

Indianapolis

Project Title: Obese Diabetic (Type II) Rate Model Without Leptin/Leptin Receptor Defects  
Granting Agency: National Institutes of Health

Project Title: Obese Diabetic (Type II) Mouse Model without Leptin/Leptin-Receptor Defects  
Granting Agency: National Institutes of Health/National Institute of Diabetes and Digestive and Kidney Diseases

### **Predictive Physiology & Medicine**

Bloomington

Project Title: Development of Robust LC-IMS-MS Techniques for Human Plasma Profiling  
Granting Agency: National Institutes of Health

Project Title: Addressable digital Array maps: Mapping Human Plasma with 2D Ion Mobility, Mass Spectrometry Techniques  
Granting Agency: National Institutes of Health

Project Title: Accurate Protein Identification Using Peptide Separation Information and Tandem M  
Granting Agency: National Institutes of Health

Project Title: Immunoaffinity Capture Coupled with Ion Mobility  
Granting Agency: National Institutes of Health

### **Prosolia**

Indianapolis

Project Title: Direct Sample Analysis with an Atmospheric Pressure Glow Discharge

Granting Agency: National Institutes of Health/National Center for Research Resources

**Quadraspec, Inc**

West Lafayette

Project Title: Highest Sensitivity Cancer Marker Array on Quadraspec's Bio-CD Platform

Granting Agency: National Institutes of Health/National Cancer Institute

**Radiation Effects Research Associates, Inc. (RERA)**

Bloomington

Project Title: Survivability of Aircraft to Terrorist Missile Threats

Granting Agency: Department of the Air Force

Project Title: Innovative Technologies for Reducing Unexploded Ordnance (UXO)

Granting Agency: Department of Defense/Air Force

Project Title: Insensitive Munitions Booster Explosives

Granting Agency: Department of Defense/Air Force

Project Title: Enhanced Visual Obscurant and Rapid Dispersal

Granting Agency: Department of Defense/SOCOM

**RemSense, Inc.**

South Bend

Project Title: RF Tomography for the Detection of IEDs

Granting Agency: Department of Defense/Air Force

**Research Associates of Syracuse**

Newburgh

Project Title: Performance Improvement of a Receiver on a Chip

Granting Agency: Department of Defense/Air Force

**RFware, LLC**

South Bend

Project Title:  $\mu$ SHARK: Software Radio Tools for Power-Efficient Programming of Multi-Core and Many-Core Digital Signal Processors

Granting Agency: Department of Defense/Navy

**River Valley Wireless**

West Lafayette

Project Title: Algorithms for Signal Separation

Granting Agency: Department of Defense/Air Force

## **Scientific Methods, Inc.**

Granger

Project Title: Development of a Novel Virus Capture System Using Positively Charged Silica Matrix

Granting Agency: Environmental Protection Agency

Project Title: Development of a simple, Quantitative Kit to Test Vegetables & Fruits for Evidence of Fecal Contamination

Granting Agency: United States Department of Agriculture

Project Title: Automated Sample Collection & Concentration System for Multiple Pathogens in Water

Granting Agency: Environmental Protection Agency

## **Selican Technologies, Inc.**

Indianapolis

Project Title: Laboratree: A Web-based Research Collaboration System

Granting Agency: National Institutes of Health

## **Semafore Pharmaceuticals (formerly ComChem Technologies Inc.)**

Indianapolis

Project Title: Chelate Based Scaffolds (Chelabody) in Tumor Targeting

Granting Agency: National Cancer Institute

Project Title: Bone Targeting of Degradable Drug-Filled Nanoparticles

Granting Agency: National Cancer Institute

## **SePro Corporation**

West Lafayette

Project Title: Aquatic Bioherbicidal Formulation Development for Mycoleptodiscus Terrestris

Granting Agency: United States Department of Agriculture

## **Sertech Heating and A/C, Inc.**

Portland

Project Title: Solar Thermal Energy Storage Vessel

Granting Agency: United States Department of Agriculture/Cooperative State Research, Education and Extension Service

## **Sha & Associates, Inc.**

Crown Point

Project Title: Novel Pressure Control System (PCS) Technologies to Improve Steam Plant Efficiency and to Reduce Environmental Impact

Granting Agency: Department of Energy

**Simulex, Inc.**

West Lafayette

Project Title: Methods to Assess Technology Insertion Impact & Optimized Manning

Granting Agency: Department of Defense

**Phase II -**

Project Title: Development of SEAS Lite Products

Granting Agency: Department of Defense

**SkySight Technologies, LLC**

Leo

Project Title: Modular, Deployable Sensor System (MDSS)

Granting Agency: Department of Defense/NAVSEA

Project Title: Protective Technologies and Installation/Implementation Methods for Undersea Instrumentation

Granting Agency: Department of Defense/NAVY

**SonarMed, Inc.**

West Lafayette

Project Title: Breathing Tube Position and Patency Monitoring System

Granting Agency: National Institutes of Health

**Phase II -**

Project Title: SonarMed Smart Tube Systems

Granting Agency: National Institutes of Health

**Technalysis, Inc.**

Indianapolis

Project Title: Unstructured Fixed Grid with Moving Body, Navier-stokes Computational Fluid Dynamics (CFD) Solver for Simulating Gas Flows

Granting Agency: Department of Defense/Missile Defense Agency

**Technical Service Corporation**

Bloomington

Project Title: Securing Training Objects and Records Management

Granting Agency: Department of Defense/Navy

## **Techshot, Inc.**

Greenville

Project Title: Magnetic Sorter Channels for Stem Cells

Granting Agency: National Institutes of Health

Project Title: Magnetic Flow Sorter Channels for Rare Cancer Cell Enrichment

Granting Agency: National Science Foundation

Project Title: Microfluidic Separator for Proteomics

Granting Agency: National Aeronautics and Space Administration

Project Title: Investigation of Electrophoresis as a Novel Coating Mechanism for Sealing Concrete

Granting Agency: Department of Defense/Army

Project Title: High Efficiency Shelter Lighting Utilizing Solid State Illumination Technology

Granting Agency: Department of Defense/Army

Project Title: Power Manager for Special Operations Portable Power Applications

Granting Agency: Department of Defense/Air Force

Project Title: On-Board Recorder for Data Acquisition during Firing and Flight of Projectiles

Granting Agency: Department of Defense/Army

Project Title: Magnetic Flow Sorter for Pancreatic Islet Isolation

Granting Agency: National Institutes of Health/NIDDK

Project Title: Sample Management System for Heavy Ion Irradiation

Granting Agency: National Aeronautics and Space Administration

Project Title: Vertical Linear Accelerator for Dynamic Visual-Vestibular Acuity Health Status Evaluation & Desensitization Training

Granting Agency: Department of Defense/Navy

Project Title: Marine Portable Power Unit

Granting Agency: Department of Defense/Navy

Project Title: Automated Shipboard Dishwashing System

Granting Agency: Department of Defense/Navy

Project Title: Deeply Buried Hardened Target Fuze

Granting Agency: Department of Defense/Air Force

Project Title: Care and Monitoring Evacuation Litter (CAMEL)

Granting Agency: Department of Defense/Air Force

Project Title: High Pressure Specimen Chamber

Granting Agency: Department of Commerce/NOAA

Project Title: Light Emitting Diode Technology Deployment Involving an Aerospace Light Application Manufacture

Granting Agency: Department of Defense/Air Force

Project Title: Microfluidic Multichannel Flow Cytometer

Granting Agency: National Aeronautics and Space Administration

Project Title: Highly Agile Command Deployable Vehicle Arresting System

Granting Agency: Department of Defense/Army

Project Title: Explosion-Proof Solid State Lighting for Extreme Environments

Granting Agency: Department of Defense/Defense Advanced Research Project Agency

Project Title: Solid State Infrared Flare

Granting Agency: Department of Defense/Army

### **The Academic Edge, Inc.**

Bloomington

Project Title: Development of Teratogenic Symbols and Educational Media

Granting Agency: Centers for Disease Control and Prevention

Project Title: Pressure Ulcer Prevention and Treatment Media and Portal

Granting Agency: National Institutes of Health

Project Title: Teratogen Warnings and Educational Media

Granting Agency: Centers of Disease Control and Prevention

Project Title: Using SBIRT to Communicate Confidentially about Substance Abuse

Granting Agency: National Institutes of Health

Project Title: ClinicWorlds: Enhancing Substance Abuse Provider Training Through Emerging Technologies

Granting Agency: National Institutes of Health/national Institute on Drug Abuse

Project Title: A Delivery System for Expedited Partner Services

Granting Agency: Centers for Disease Control and Prevention/National Center for HIV/STD Prevention

Project Title: Enhancing Clergy Suicide Prevention and Referral

Granting Agency: National Institutes of Health/National Institute of Mental Health

### **Therametric Technologies, Inc.**

Indianapolis

Project Title: Development of QLF Handpiece for Early Caries Detection

Granting Agency: National Institutes of Health/National Institute for Dental

and Craniofacial Research

Project Title: Image Analysis Algorithm for Early Caries Detection  
Granting Agency: Department of Health and Human Services

Project Title: Caries Risk Assessment Instrument for Young Adults  
Granting Agency: National Institutes of Health

**This Old Farm, Inc.**

Darlington

Project Title: Value-Added Multi-Purpose Processing Establishment Using  
Renewable Energy Sources as a Centerpiece to a Sustainable Educational Farm  
Granting Agency: United States Department of Agriculture

**Thorn Micro Technologies, Inc.**

West Lafayette

Project Title: Compact Heat Sink Using Microscale Ion Driven Air Flow  
Granting Agency: National Science Foundation

**Tienta Sciences, Inc.**

Indianapolis

Project Title: Tunable Super-Lens for Nanoscale Optical Bio-Imaging  
Granting Agency: Department of Defense/Army

**Tracera, LLC**

Zionsville

Project Title: Flourine-18 Radiosynthesis Module  
Granting Agency: National Institutes of Health

**Trellis Growing Systems, LLC.**

Fort Wayne

Project Title: Modular Trellis System for Brambles  
Granting Agency: Department of Agriculture

**Trexco, LLC**

Indianapolis

Project Title: Heat Energy Recovery and Reuse for Electric Power Grid Optimization  
Granting Agency: Department of Energy

**Victor Technologies, Inc.**

Bloomington

Project Title: Reliability Assessment of Nondestructive Evaluation via Eddy-Current Model-based Inversion

Granting Agency: Department of Defense/Air Force

### **VitaCyte, LLC**

Carmel

Project Title: Tissue Dissociation Enzymes for Islets and Other Cells

Granting Agency: National Institutes of Health/National Institute of Diabetes and Digestive and Kidney Disease

Project Title: System to Analyze Factors Affecting Human Islet Yield

Granting Agency: National Institutes of Health

Project Title: Improved Recombinant Collagenase for Tissue Dissociation

Granting Agency: National Institute of Diabetes and Digestive and Kidney Diseases

### **Vyante, INC**

Indianapolis

Project Title: Software to Aggregate, Correlate, Analyze and Trend Data for Knowledge Management in Decision Making

Granting Agency: National Science Foundation

### **Wavepoint Research, Inc.**

Newburgh

Project Title: Radio Frequency/Microwave hazard Assessment Tool (RHAZ)

Granting Agency: Department of Defense/Air Force

Project Title: Cooperative Handheld Location Device Using Signals of Opportunity

Granting Agency: Department of Defense/Air Force

### **Wolf Technical Services, Inc.**

Indianapolis

Project Title: Helicopter Aircrew Restraint

Granting Agency: Department of Defense /Air Force

Project Title: Semi-Active Damped Seating Technology for the EFV

Granting Agency: Department of Defense /Marine Corp

Project Title: Innovative Research for Crashworthy Stowable Troop Seating for Helicopters AF081-003

Granting Agency: Department of Defense/Air Force

Project Title: Weigh In Motion Sensor  
Granting Agency: Department of Defense/Army

**Phase II -**

Project Title: Helicopter Aircrew Restraint  
Granting Agency: Department of Defense /Air Force

**Xtreme Alternative Defense Systems (XADS)**

Anderson

Project Title: Personnel Neuromuscular Disruptor Incapacitation System (Stunstrike)  
Granting Agency: Department of Defense/Marines

Project Title: Anti-Rocket Propelled Grenades (RPG) Technologies  
Granting Agency: Department of Defense/Office of Naval Research

**Yinnel Tech, Inc.**

South Bend

Project Title: Spectroscopic Quality Radiation Detection Materials Growth  
Granting Agency: Department of Energy

**Zeeko Technologies, LLC**

West Lafayette

Project Title: Edge Control in Large Segmented Optics Using Zeeko Polishing Technology  
Granting Agency: National Aeronautics and Space Administration

Project Title: Application of Zeeko's Novel Random Tool Path for Improvement of Surface PSD  
Granting Agency: National Aeronautics and Space Administration