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THE BEST IN SBIR

SMALL BUSINESS INNOVATION RESEARCH 2014

TIBBETTS | SBIR

AWARDS HALL *of* FAME

SBA

U.S. Small Business Administration

Congratulations to the recipients of the 2014 Tibbetts & SBIR Hall of Fame Awards

Created in 1953, the U.S. Small Business Administration (SBA) helps Americans to start, grow and succeed with their own companies. The agency's mission often is described as the "three Cs": facilitating access to capital, providing counseling, and ensuring that small businesses receive a quarter of federal contract dollars.

One key way the SBA accomplishes these goals is through two programs: one devoted to small business innovation research (**SBIR**), the other to small business technology transfer (**STTR**). Through these competitive programs, SBA ensures that the nation's high-tech, innovative, small businesses are a significant part of the federal government's research and development (R&D) efforts.

These programs have helped thousands of small businesses over the years. Today, we recognize the cream of the crop—those companies and individuals across the country that have used their SBIR/STTR funds to advance technological innovation and stimulate economic growth.

Tibbetts Awards

Named after Roland Tibbetts, who was instrumental in developing the SBIR program, the Tibbetts Awards are presented annually to those who are beacons of promise and models of excellence in high technology. Winners are selected based on the economic impact of their technological innovation, and the extent to which that innovation served federal R&D needs, encouraged diverse participation, and increased the commercialization of federal research. There are two types of Tibbetts Awards: awards for businesses that have participated in the SBIR Phase I and II award programs, and awards for individuals who have supported the SBIR Program.

SBIR Hall of Fame

The SBIR Hall of Fame recognizes companies with a long period of extraordinary success of research, innovation, and commercialization within the SBIR program. To be eligible for the award, a nominee must have won a SBIR award and continued to contribute significantly to the goals of the SBIR program.

In the pages that follow, we profile each recipient and their achievements. Individually, these profiles evince remarkable ingenuity, resolve, and success. As a whole, they demonstrate a remarkable range of benefits–locally, regionally, and nationally–and sustain the conviction that America's future is as bright as its past.

TABLE OF CONTENTS

TIBBETTS AWARD

SBIR HALL OF FAME

SBIR 2014 TIBBETTS AWARDS

NanoMech, Inc.

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NanoMech, Inc. develops and markets innovative, nanomanufactured products that improve the quality of life around the world. The company has developed breakthrough innovations in machining and manufacturing, lubrication and energy, packaging for fresh produce supply chains, biomedical implant coatings, and strategic military applications. NanoMech's motto "Making atoms work harder and smarterTM" reflects its commitment to seek methods to extend the use and performance of earth's material resources by discovering novel, improved ways for elements and materials to be used. Through improvements to the nanomanufacturing industry, it finds ways to exponentialize materials, reducewaste, reuse elements and recycle materials, and increase energy efficiency.

NanoMech is a privately held company that was formed in 2002 by the company's Chief Technology Officer Dr. Ajay P. Malshe. Upon receiving its first external funding in January 2003, NanoMech began working to develop nanomanufactured products based on a coating technology pioneered by Dr. Malshe and co-investigator Dr. Wenping Jiang and exclusively licensed from the University of Arkansas. From 2003 until 2008, NanoMech developed various applications of the NanoSpray technology under government and industrial sponsorship. In 2008, Mr. James M. Phillips joined as Chairman, assembled a Board of Directors, and led an investment round to bring to market the multiple award winning TuffTek® NanoSpray coatings to deposit ultra-hard particles onto surfaces as a means to create the most superior coating for cutting toolsused in manufacturing worldwide.

In May 2009, NanoMech had a ribbon cutting ceremony led by Governor Beebe featuring numerous regional dignitaries for its new custom-designed 9000 sq. ft. nano-manufacturing facility built in Springdale, Arkansas. In 2010, NanoMech added 8000 sq. ft. of R&D facilities in the Arkansas Research and Technology Park in Fayetteville, Arkansas. In late March 2014, NanoMech broke ground on its $10M manufacturing facility expansion centered in Springdale, Arkansas due to customers' pull of its products.

NanoMech has designed and developed several product platforms to compete in significant market segments through the leveraging of its proprietary technologies and innovation skills and the strategic manufacture of nano-enabled products. Each of the technology platforms are also used to design and develop additional products as the market need for such solutions is identified. NanoMech's technology and products have recently received top innovation awards from Edison award, R&D Magazine, Frost & Sullivan, and the U.S. Department of Commerce. In 2011, the Company was chosen by Arkansas' largest business publication for the award "Number One Company to Watch." In 2012, Jim Phillips and Dr. Ajay Malshe were selected by the NanoBusiness Commercialization Association to the Most Influential Nanotechnology Leaders List.

EXQUADRUM, INC.

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Founded by Kevin E. Mahaffy and Eric E. Schmidt in 2002, Exquadrum, Inc. is an R&D engineering corporation with the ability to produce innovative solutions and move quickly through the stages of analysis, design, hardware fabrication, and testing. The company has expanded its process to include the production of finished products, most of which have been patented. The founders of Exquadrum see to it that the company lives up to its tag line of being "Innovation's Prime Contractor" as a R&D engineering company that develops and demonstrates new rocket propulsion and munitions technologies for the Department of Defense and NASA.

Exquadrum's name is derived from Latin and connotes "thinking outside the box" to generate creative solutions to demanding technical challenges. Exquadrum's ultimate competitive advantage today, and the only feasible one for the America of the future, is innovation. Utilizing SBA's SBIR program, they have applied their R&Dskills toward providing innovative solutions for the US Government's unique technical challenges. Exquadrum has grown from the two founding partners to a staff of up to 33, comprised of engineers, technicians, and business operations specialists. The company's key employees have over 130 years of combined experience in rocket related advanced technology R&D, and have a combined total of 16 patents. For nearly 12 years, Exquadrum has performed on over 130 projects valued at over $25M which includes 67 SBIR contracts worth $22.6M. Between 2009 and 2013, Exquadrum saw a 250% increase in gross sales. Company growth has been driven by diversification into a wide range of innovative products including rocket boosters for launching commercial satellites, propulsion systems for missile-defense, and high-performance upper stage rockets.

PACIFIC BIOSCIENCES OF CALIFORNIA

1380 Willow Road, Menlo Park, CA 94025
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Pacific Biosciences offers the PacBio® RS II DNA Sequencing System to help scientists solve genetically complex problems. Based on our novel Single Molecule, Real-Time (SMRT®) technology, our products enable: de novo genome assembly to finish genomes in order to fully identify, annotate and decipher genomic structures; targeted sequencing to more comprehensively characterize genetic variations; and DNA base modification identification to help characterize epigenetic regulation and DNA damage. Our technology provides the industry's highest consensus accuracy and longest read lengths along with the ability to detect real-time kinetic information. The PacBio RS II System, including consumables and software, provides a simple, fast, end-to-end workflow for SMRT Sequencing.

Our customers and our scientific collaborators have published a number of peer-reviewed articles in journals including Nature, Genome Research and The New England Journal of Medicine highlighting the power and applications of the SMRT platform in projects such as finishing genomes, rare mutation discovery and the identification of chemical modifications of DNA related to virulence and pathogenicity. Our R&D efforts are focused on expanding the performance of our platform by exploiting the unique capabilities of our Zero-Mode Waveguide (ZMW)-based technology and by expanding the application space. By providing access to genetic information that was previously inaccessible, Pacific Biosciences enables scientists to increase their understanding of biological systems.

MAINSTREAM ENGINEERING

200 Yellow Place, Rockledge, FL 32955
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Mainstream Engineering is a solutions-oriented research, development and manufacturing small business located in Rockledge, Florida, and was founded in 1986. Mainstream focuses on the total system solution to thermal control and energy conversion problems and dual-use commercialization for government and private sector products. Mainstream's efforts have provided steady job growth for the hard-hit Space Coast Florida region and have resulted in more than $100 million in new long-term production contracts derived from SBIR funded projects. Our past successes include: first vapor-compression refrigeration compressor to fly on the International Space Station; Rugged Modular Environmental Control Units and Modular Refrigeration/Freezer Units; compact cooling systems for high-power electronics and high-energy lasers; advanced nanotube-enhanced surfaces and composites; high heat flux cold plates and nanotube-enhanced passive heat transfer surfaces; new battery and fuel cell technologies; new Automotive Diesel-Electric Hybrid Drive System (spin-off company Rivian Automotive, http://www.rivian.com/); and, new portable biomass process technology for the conversion of landfill waste and farm residue into bio-oil derived fuel and fuel additives.

Mainstream has received numerous honors for outstanding performance, commercialization and innovation. Included in these honors are several Blue Chip Enterprise Initiative Awards, Tibbetts Award, and Small Business Prime Contractor of the Year Award for the Southeast Region, the Governor's New Product Award (Florida), 50 Florida Companies to Watch Award, Florida Excellence Award for Excellence in Commerce, and several local jobs creation awards. Mainstream maintains a 100% DoD SBIR Commercialization Index.

Mainstream began with two SBIR contracts from the U.S. Air Force. Today, operating out of our 5-building, 85,000 ft2 facility, this premier R&D and 100% US manufacturing company transitions advanced technologies into high-quality, cost-effective commercial products. Mainstream has a track-record of successfully using internal funds to supplement SBIR funding to achieve commercially successful products.

Mainstream currently produces more than 20 commercial Heating Ventilating, Air Conditioning and Refrigeration (HVAC/R) products (QwikProducts, www.qwik.com) sold by more than 7,000 industrial wholesalers worldwide. Its licensed products include QwikBoost and QwikShot, sold nationwide with retail distribution at WalMart, Target and major auto-supply stores. Mainstream Engineering is also a leader in the certification of HVAC/R technicians to EPA Section 608 and 609 standards in the US (www.EPAtest.com).

Mainstream has a long tradition of actively supporting the local community, with employees serving in national and local chapters of professional organizations, and supporting local universities by serving as adjunct professors, board members and with joint research efforts.

STRUCTURAL COMPOSITES, INC.

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Structural Composites is one of the world's leading innovators in composites technology. Our company has a long and successful track record of delivering innovative products, processes and solutions in both the defense and commercial composites markets. The company was formed in 1987 by Dr. Ronnal Reichard (CEO) and Scott Lewit (President). We are a Florida Institute of Technology (FIT) spinoff, with Dr. Reichard still holding a professorship at FIT. In 1985, Scott Lewit received his MS in Ocean Engineering and in 1982 his BS in Oceanography, both from FIT. Together Reichard and Lewit have led the company from start-up to world renowned recognition for innovations in composite technology.

Although the company does business nationwide and internationally, Structural Composites maintains a strong regional presence. We are committed to helping reinvigorate our region in the wake of the ending of the space shuttle program. We team with local innovators and government agencies such as NASA to promote work opportunities in Brevard County. Mr. Lewit is the chairman of the board of directors of the Space Coast Energy Consortium, and has been active in supporting our local economy by participating in events such as the Brevard Strategic Doing series. Since our company's inception we have consistently interned and worked with FIT students to help create the composite engineers of the future. Our patented PRISMA technology has received many awards including the FL Governor's New Product Award, and PRISMA has been a two time winner of the NMMA's (National Marine Manufacturers Assn) coveted IBEX Innovation Award for best boat building material (2009, 2010.) Over 250,000 boats have been produced using PRISMA.

Structural Composites is an IP focused company. Our primary products are R&D services and innovations in composite materials, composites manufacturing processes and applications for composites. Our services include R&D, Consulting Engineering, Independent Test Laboratory Services (Sigma Labs), Manufacturing and Manufacturing Technology Development.

The founding partners of Structural Composites are established technical leaders in the composites industry. Dr. Reichard has served on the National Academy of Science Committee for Composites. Mr. Lewit is currently serving his fifth term on the Executive Steering Committee for The Composites Consortium (TCC), which is the technical resource for The Navy Center of Excellence for Composites Manufacturing Technology. Both principals are active writing and presenting at industry conferences such as Defense Manufacturing Conference (DMC), Society of Manufacturing Engineers (SME), International Boat Builders Exhibition and Conference (IBEX), American Composites Manufacturers Association (ACMA) and the Navy's Multi-Agency Craft Conference (MACC).

We reinforce our strong leadership position by providing industry training. In partnership with the Office of Naval Research, Structural Composites co-developed the Composites Boat Building Certification and the Composites Laminator Classes for the American Boat and Yacht Council (ABYC), and we serve as instructors for these classes. Under this program Structural Composites has trained US based boat builders, the US Coast Guard, the US Navy and the prime contractors supplying composites to the Navy.

GEOCENT LLC

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The nomination of Geocent LLC for the 2014 Tibbetts award is based on how an innovative Louisiana company was able to use technology, developed via their Phase One SBIR, to help solve a critical problem during the recent BP oil spill in the Gulf of Mexico. This technology developed under Phase l was so critical and timely that it was used directly after Phase 1 for an operational component to address critical communications needs by the Governor's Office of Homeland Security in Louisiana. This saved time during the clean-up process and saved lives due to the ability to cross communicate among agencies. This same technology was adopted by the U.S. Navy as a means to solve critical inter-connectivity problems in communications after having spent several million dollars without much success.

Geocent LLC is a small business headquartered in Louisiana with offices in Baton Rouge, LA; Charleston, SC; Huntsville, AL; New Orleans, LA; and the NASA John C. Stennis Space Center, in Mississippi. Established in 1992, the company provides innovative IT solutions/services including the engineering of custom software, data integration, IT contracting/outsourcing, network engineering, enterprise storage and security systems. Clients include government, social services, plus commercial industries such as oil and gas exploration, marine transportation, and healthcare. Geocent was identified as one of the fastest growing in 2012 by Inc. Magazine and today the company employs more than 200 personnel with continued growth.

Clients of Geocent include the US Navy; US Veterans Administration; US Department of Homeland Security; the Governor's Office of Homeland Security and Emergency Preparedness in Louisiana; the Naval Oceanographic Office (NAVO); Naval Meteorology and Oceanography Command (CNMOC); and NASA. Geocent maintains strong partnerships with major vendors such as Microsoft, Cisco, Oracle, Citrix, and Novell. Geocent is a Microsoft Gold Partner and is one of only two Managed Microsoft partners in Louisiana.

Geocent is a strong advocate of the SBIR Program, having leveraged their SBIR R&D to solve mission-critical needs at federal agencies, while generating opportunities for the company to expand/build credibility. They have submitted over a dozen SBIR proposals since the inception of the company, and to date have won five awards from the US Department of Defense, NASA and the US Department of Homeland Security, including a Phase Two award. Their DHS SBIR Phase I led to current Phase III sole source justification with the US Navy.

Utilizing SBIR, Geocent has provided both state and federal agencies with much needed first response, emergency preparedness and disaster coordination tools and solutions to challenging problems. The benefits are a faster response time, and more informed rescue/recovery to protect the public. In 2013, Geocent received a new Phase l award from the US Department of Defense under the title: "User-worn Rehabilitative Devices for Balance Disorders." This is a smart device worn by a patient that enables balance exercises, monitors balance control, collects data, and sends reports to medical personnel via smart phone. For the warfighter, this is especially important given the difficulty of the variety of blast related injuries.

RICHARD A. BENDIS

President and CEO, BioHealth Innovation, Inc.

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Mr. Bendis is a distinguished and successful entrepreneur, corporate executive, venture capitalist, investment banker, innovation based economic development (IBED) leader, international speaker and consultant in innovation and economy building. Mr. Bendis currently serves as the founding President and CEO of BioHealth Innovation, Inc., a Central Maryland innovation intermediary focused on accelerating the growth of commercially relevant research from universities, Federal Labs and entrepreneurs focused in the biohealth industry. He is also Founder, President and CEO of Innovation America (IA), a Global Innovation Intermediary focused on accelerating the growth of the entrepreneurial innovation economy in America.

- Global advocate for accelerating awareness of Innovation, Entrepreneurship and Early Stage Capital in stimulating Innovation Based Economic Development (IBED)
- International speaker on Building Innovation and Entrepreneurial Ecosystems and Innovation-Based Economic Development Strategies (Voted in 2012 Top 5 Innovation Speaker by Speakers Platform)
- Editor and Publisher of innovationDAILY an e-newsletter/Blog reporting on Global trends on innovation with over 1,000,000 unique visitors in over 185 Countries (Voted The 4th Best Innovation Blogger in The World by Blogging Innovation)
- Early Stage Capital Fund of Funds Consulting and Formation and currently serves as a VC Investment Manager with Relevance Capital, a Nashville, Tennessee VC firm, and is also an Angel Investor.

Mr. Bendis has been appointed to several national innovation related organizations and committees, including the White House US Innovation Partnership (USIP) Advisory Task Force and Co-Chair of the Small Business Innovation Research Committee. He has offered a career of service of support to the SBIR program through founding SBIR and technology commercialization initiatives in three different states (Kansas, Pennsylvania, & Maryland) and has participated in both US advocacy and international adoption of the SBIR program. He has served as the President & CE,O of three leading public-private partnerships of their times to support innovation-based economic development, the Kansas Technology Enterprse Corporation, Innovation Philadelphia, and BioHealth Innovation of Maryland.

Mr. Bendis leveraged a successful career in the private sector with Quaker Oats, Polaroid, Texas Instruments, Marion Laboratories and Kimberly Services before embarking on public sector leadership in technology commercialization.

Mr. Bendis also successfully built an Inc. 500 healthcare software company, Continental Healthcare Systems, Inc., which he took public on NASDAQ and later sold to an international conglomerate. He was a nominee for the 2005 Ernst and Young National Entrepreneur Supporter of the Year Award (EOY) and was the 1996 recipient of the Regional Ernst and Young Entrepreneur of the Year Award.

JOHN PUCCI

U.S. Army SBIR Operations Manager

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Since 2007, Mr. Pucci has served as Operations Manager for the United States Army SBIR program. He manages topic generation and source selection processes representing 25 Army organizations for inclusion in 3 OSD solicitations and executing over two hundred million dollars per year. He ensures source selection protocols on 900 contract award actions adjudicated from 3000+ proposals annually for accurate selection data and expeditious contract awards to selected contractors. In addition, he works closely with warfighter requirements authors to identify and prioritize technology shortfalls to be addressed in SBIR projects.

He has fostered innovative solutions to Army R&D objectives and assisted small businesses to develop and transition technologies, either back to the private sector or to the government. In addition he manages budget execution processes and the Commercialization Readiness Program (CRP). As a result of his continued efforts, the Army SBIR program has enjoyed its most significant successes during his tenure. Phase III commercialization successes have quadrupled from $400M in FY06 to the current $1.7B documented Phase III Army SBIR commercialization successes. The program has enjoyed stellar ratings received during Inspector General and GAO reviews coupled with no prosecuted contractor protests during his tenure. Mr Pucci has made important contributions and is a strong advocate and supporter of the SBIR program.

ROBOTIC RESEARCH LLC

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Robotic Research LLC is an 8(a) small disadvantaged business specializing in the innovative field of unmanned systems R&D. Additionally, Robotic Research, LLC conducts cutting-edge research involving sensor development and integration; GPS-denied localization devices; aids for improved tele-operation of robots during communication delays; a system for better navigation and control of outdoor wheelchairs; a system for quickly time-tagging and retrieving surveillance video; and, the focus of this nomination, a program for the rapid production of low-cost, customized robots for use by first responders and other Department of Homeland Security support needs. The company president, Alberto Lacaze, co-founded Robotic Research, LLC in 2002 with Karl Murphy, Vice President.

They previously worked at the National Institute of Standards and Technology, Intelligent Systems Division where both were co-authors on the benchmark document, 4D/RCS Version 2.0: A Reference Model Architecture for Unmanned Vehicle Systems, (2002) and involved in the baseline testing of autonomous unmanned ground robots. Mr. Lacaze is a recognized international expert and advisor to the US State Department on autonomous unmanned systems.

ELDERTIDE LLC

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Eldertide LLC founded by Edie Johnston in 2007, is located in Dresden, Maine, and specializes in the growth of phytonutrient rich berries and botanicals for use nutraceuticals, herbal supplements and functional foods. Eldertide LLC's purpose and mission is threefold: to grow superior quality certified organic berries and botanicals; to conduct horticultural research; and to develop plant based medicines and intermediate products for national and international distribution.

Eldertide's goal is to optimize human health by merging ancient medical traditions with current phytomedicinal research. President Edie Johnston and son Geo Johnston believe in creating products that benefit users and are developed to support specific body systems and special circumstances. Their first product line, Anthoimmune™ organic elderberry syrup, formulated to boost immune system response, is their top selling product with three other products currently in distribution.

Eldertide has created five products based on the USDA Phase I and II awards received in 2009 and 2010 respectively and to date the company has received over $550,000 dollars in state and federal support. The products developed by Eldertide are sold in Whole Foods throughout the North Atlantic, Northeast and Southeast Regions, countless health food stores, and at the renowned Common Ground Fair, hosted by Maine Organic Farmers and Gardeners Association. Products are also sold via Eldertide's sister company, Maine Medicinals, Inc. The company has seen year over year growth and currently employs 3 people with more part-time and temporary employees hired at various periods throughout the year.

While Eldertide may be a small company, its team in developing new nutraceuticals is quite large, partnering with university scientists in the fields of analytical chemistry, microbiology, and food science, including experts from: the University of Maine's Food Science and Human Nutrition department, Oregon State University, CEI's Sustainable Agriculture program, FDA, USDA, and the Larta Institute.

Through innovation, Eldertide has transformed elderberry production beyond a specialty crop into a marketable suite of value-added nutraceutical products that are meeting the demands of healthy and organic consumers while also impacting the economy by creating jobs and helping to preserve Maine farmlands and family farms.

REALTIME TECHNOLOGIES, INC.

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Realtime Technologies, Inc., was founded in Michigan in 1998 by Dr. Richard Romano. RTI was successfully bootstrapped by Dr. Romano using SBIR projects, with no other outside investment, into the leading research driving simulator company in the US. The foundation of the company was built upon Dr. Romano's doctoral research which yielded a new motion drive algorithm that is used in over 1000 motion systems throughout the world. The algorithm is used in both military and commercial flight and driving simulators to make simulators feel more realistic and continues to be used in simulators worldwide. RTI used five strategic SBIR projects with the US Army TARDEC in Warren MI, each of which was awarded a Phase II, to develop the most advanced real-time vehicle simulation software available. This includes vehicle dynamics, audio subsystems, motion drive algorithms, scenario systems, after action review systems, and control loading feedback solutions. The software is used extensively by the military and commercial simulation community. RTI has grown to deliver full driving simulators focused on supporting the vehicle design process. RTI simulators are used to design military and civilian vehicles with better handling that are more comfortable, and more ergonomic. RTI simulators are also being used at the forefront of autonomous vehicle design.

Dr. Romano successfully marketed and sold RTI to FAAC, Inc. in 2008, while maintaining his position as president. FAAC is also based in Michigan and is part of Arotech, a publicly traded company. FAAC focuses on the development and delivery of driver training simulators for a wide range of vehicle types including heavy trucks, light rail vehicles, buses, fire trucks, police cars, ambulances, airport ground vehicles, and military wheeled vehicles. FAAC Inc. is the leading supplier of ground vehicle training simulators to the US military with over forty years of experience in simulation and training systems. RTI has expanded rapidly in the research simulator market delivering over 100 advanced research driving simulators in Germany, China, Australia and the US. Five of the top ten automotive manufacturers in the world use RTI simulators. In addition FAAC uses RTI's SimForce, vehicle dynamics, motion drive algorithms and SimObserver products (developed with SBIR funds) on over 400 of their driving simulators.

ADVENTIUM ENTERPRISES

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Adventium Labs is an R&D company that specializes in cyber security, automated reasoning, and systems engineering. Based in Minneapolis, Adventium was founded in 2002 and currently has 30 employees. The technical staff consists of approximately 50% Ph.D., 25% M.S, and 25% B.S. scientists in mathematics, computer science, electrical engineering, and psychology. Starting in late 2010, with a new owner group, Adventium embarked on a strategy to transition its world class research to practical use. Most of its staff has experience transferring technology in industrial settings. Adventium's SBIR projects have played a key role in fueling this strategy. As a result, Adventium has developed a strong Phase 3 track record. This has led to recognition for its technology transfer efforts by the Air Force and a perfect DoD SBIR commercialization score of 100. Adventium has several transition efforts underway, including plans for its first spinoff company, based on NIH SBIR work, called Andamio Games (see www.andamiogames.com).

Adventium's work to address scaling issues in large scale cyber defense deployments is an SBIR-developed technology called Cyber Architecture Reasoner Inferring Network and Application Environments (CARINAE), which identifies robust architectures and configurations that satisfy mission requirements for large-scale deployment of cyber defenses. Adventium has multiple ongoing Phase 3 efforts that leverage CARINAE. One project is addressing cloud resource allocation for DARPA and another is extending it to cyber-basedmission assurance on trusted hardware capabilities for the Air Force.

Adventium is dedicated to community growth and supports local, national, and international organizations, including educational, professional, and social initiatives. In the past year, Adventium sponsored or helped organize conferences in robotics, cyber security, and artificial intelligence. Adventium provides conference room space and several volunteers to the Minnesota First Lego League, supports other local and national STEM initiatives, and provides employees one paid day per year to donate time to a charity of their choice.

PACIFIC ENGINEERING, INC.

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Pacific Engineering, Inc. (PEI), is a small business located in Roca, Nebraska, and is a key member of the Surface Ship Torpedo Defense System (SSTD) Team for the Undersea Defensive Warfare Systems Program Office at the Naval Sea Systems Command (NAVSEA) in Washington, DC. PEI has been performing engineering design services, product development, prototyping and manufacturing complex, high strength, light weight, composite and metal components since 1998, and has worked closely with the SSTD program over the last several years on the development and fielding of the Ready Stow Group (RSG) Launcher and the All Up Round Equipment (AURE) Composite Canisters. The SSTD program provides a detect-to-engage hard kill torpedo defense capability comprised of the Torpedo Warning System (TWS) that provides state-of-the-art detection, classification and localization of incoming threat torpedoes and the highly maneuverable Countermeasure Anti-Torpedo (CAT) that seeks and destroys the incoming threat weapons.

The construct of the system development, heavily leveraged small business partners that have applied innovative engineering to modify components such that they can be used in a fixed installation aboard a carrier with a higher level of confidence in system reliability and availability. PEI, in particular, proved to be very flexible in their approach to the rapid delivery and the effort to modify the design of the ready stow cradles for the CAT, resulting in a more compact cradle, a simplified CAT handling and load out process, and an estimated reduction of almost $2M per carrier install. PEI's innovative designs and products have been a major contributor to the success of PMS415 Acquisition Program of Record (POR) in both the CAT and TWS programs. Their innovation has helped the Navy meet their critical operational availability and forward presence requirements.

In 2011, the Chief of Naval Operations (CNO) directed the PMS415 SSTD Team to accelerate their program to build, test and install a rapid prototype torpedo defense capability on a deploying aircraft carrier in less than 2 years. Focusing on customer satisfaction and fleet mission needs, the SSTD Team executed an aggressive development program that met the CNO's challenge in just 16 months. Pinnacle to the team's ability to accomplish this task was their propensity to bring together the resources of industry, innovative small businesses (PEI), five government Naval Warfare Centers, and the Applied Research Laboratory of Pennsylvania State University.

INRAD OPTICS, INC.

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Inrad Optics, Inc. has long been known as one of the photonic industry's seminal crystalline products companies. In operation since 1973, we built a reputation on our ability to grow and fabricate crystalline materials of exceptional quality. Today, we are a vertically-integrated photonics manufacturer offering crystal-based optical components and devices, custom optical components from both glass and metal, and precision optical and opto-mechanical assemblies.

Our components and value-added photonic devices can be found in technologies developed for defense, aerospace, laser, medical, process control, and metrology applications. All of our engineering and manufacturing operations take place in the US from our 42,000 sq. ft. facility in Northvale, NJ. We serve a global customer base of technology firms, research universities, and governments. Prominent among our customers are US military organizations and the national laboratories.

By successfully leveraging SBIR funding, existing equipment, and in-house technical expertise, Inrad Optics has brought stilbene, a crystalline neutron-detection material, to commercial production. Stilbene has the potential to facilitate dramatic improvements in the technologies used for detection and characterization of neutron radiation, with potential applications at nuclear reactors, industrial and research neutron sources, and in equipment designed for identification of special nuclear material. Prior to the initiation of this DNDO-funded SBIR effort, stilbene was available only in limited quantities. The success of this SBIR is evident in the evolution from a laboratory-scale effort to low-rate commercial production. Inrad Optics began sales of high-quality stilbene midway through the Phase II program, a mere two years after beginning R&D. This remarkably rapid progress for a material development project is a testament to the well-coordinated effort between Inrad Optics personnel and our collaborators at Lawrence Livermore National Laboratory.

STAR CRYOELECTRONICS LLC

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STAR Cryoelectronics LLC was formed as a limited liability company in the State of New Mexico in April 1999 and is headquartered in Santa Fe, NM. STAR Cryoelectronics is engaged in the business of designing, manufacturing and marketing advanced sensors and cryogenic detectors based on superconductors and related control electronics, and more recently next generation cryogen-free X-ray spectrometers for X-ray microanalysis and synchrotron science applications. The company has established a worldwide reputation as a supplier of leading-edge sensor and control electronics products for a broad range of applications including biomedical imaging, non-destructive testing of materials, geophysical exploration, and laboratory instrumentation. STAR Cryoelectronics was selected in 2012 by the Regional Development Corporation's Northern New Mexico 20/20 Campaign to recognize 20 high-growth companies in the region before the year 2020. Including the company president, STAR Cryoelectronics currently has six employees with plans to hire an additional two to three technical staff members in 2014.

The company currently occupies 8,000 square feet of commercial space devoted to thin-film device fabrication, R&D activities, final assembly and test of product, shipping, sales and marketing. STAR Cryoelectronics has established extensive thin-film deposition and patterning capabilities for advanced superconducting device fabrication and production. The company's cleanroom facility includes a Class 1,000 space for thin-film deposition and etches, and a separate Class 100 space for photolithography. The total investment in buildings, facilities, and capital equipment over the past 15 years is nearly $4,000,000. Several of the company's current products were developed primarily through prior SBIR and Advanced Technology Program awards. These prior awards have enabled the company to develop core technical expertise in superconducting electronics and commercialize an extensive range of superconducting sensor and control electronics products. This has provided a solid foundation for the more recent development and commercialization of advanced X-ray spectrometer systems funded by the SBIR program.

SENTIENT CORPORATION

672 Delaware Avenue, Buffalo, NY 14209
1-888-522-8506 • www.sentientscience.com

Sentient Science is a software, modeling, and sensor company delivering the words most tested products to reduce the bottlenecks in traditional and advanced manufactured products. Then to reuse those models enable those products to be operated at the lowest cost in the field, via our DigitalCloneLive network, a cloud based service over the industrial Internet from Buffalo, New York and Idaho Falls, Idaho. Since 2001, we have been developing rotating equipment simulation technology to increasing material, component and system testing through "equal to physical test" Computational Modeling and reuse those models in a next generation Asset Management, Life Extension and now an advanced remanufacturing system. Our customers now understand how, when, and where materials, component and systems will fail at a microstructure level and where cracks initiate at the subsurface and surface levels. After, challenging DARPA lead R&D leveraging $23 Million dollars of competitive funding from DoD, DoE and NSF, validations by NASA and 10 paid validations/pilots by fortune 500 partners, DigitalClone is commercially available since 2013.

DigitalClone solutions enable much more testing of a product's performance at a 1/10th cost and time than physical testing methods of a material or component test rig or a system Dynamometer. The 23 person, Sentient team, who are majority composed of PhDs, (Tribology, Material Science, Uncertainty Mathematics and Multi-Body Dynamics) are committed to developing and commercializing technology that cost effectively improves the energy efficiencies of rotating energy equipment to reduce cost of energy. DigitalClone is based on four fundamental capabilities; Prognostic Life and Performance Technology, Life Extension Solutions, Advanced Remanufacturing Solutions and delivering all this over their 8000 processor network via the Industrial Internet. Today Sentient is solving or in the process of solving the following failure modes and adding new modes yearly; Micro-pitting Fatigue, Spalling Fatigue, Bending Fatigue, Fretting Fatigue, Wear – Polymers, White Layer Etching, Metal Wear (Abrasion, Adhesion, Scuffing), Corrosion Fatigue, Composite Delamination, Coating Degradation, and Fretting Wear.

In 2014 we are introducing our newest product called DigitalReman. This Advanced manufacturing solution will initially focus on Remanufacturing and will return a drivetrain to service with the right specification for that specific asset use, advanced manufactured here in the USA, better than new retaining 85% of the original energy use in manufacturing and eliminating the 50% of parts that are now scrap by incoming inspection. In the future we will migrate this solution to all advance manufacturing processes including Metal and Polymer Based Additive Manufacturing. We are members of the Industrial Internet Consortium, EWI managed Advanced Manufacturing Institute in Buffalo, NY and joining the UI Labs managed Chicago, IL, Digital Manufacturing and Design Innovation Institute.

TACTUS TECHNOLOGIES, INC.

7204 Scotland Road, Akron, NY 14001
716-462-7240 • www.tactustech.com

Tactus Technologies, Inc. was founded in 2001 in Amherst, New York. Tactus Technologies Specializes in developing 3D Virtual Environments with academic and industrial training Applications. Since its foundation, Tactus has been a pioneer in developing Virtual Reality (VR) solutions and has created the next generation of physics based software libraries that allow for real-time interaction, simulation, and visualization along with hardware solutions for haptic manipulation and virtual environment interaction.

Tactus's approach is quite a bit different than industry standard companies. Tactus develops what are referred to as Virtual Environments for training, education and product development. These virtual environments provide a sensory experience, which allow the user to not only visualize the simulated environment in 3D but, through the use of haptic feedback hardware, allow the user to interact with and feel objects within that environment. Tactus has developed software packages like; VFrog™ (Virtual Frog Dissection): the world's first virtual-reality based frog dissection software delivers a hands-on active learning experience; allowing students to pick up a virtual scalpel and cut open the skin, as well as pull, probe, and examine the virtual specimen as they would a real frog. TILE™ (Tactus Immersive Learning Environment): an easy to use VR authoring tool for teachers to create content, a programmer's library for professional content creation, and a series of bundled ready to use titles based on national science curriculum standards. Protean™ (Virtual Clay Modeling): a clay modeling software package that allows the user to mold clay in the virtual environment like they would in the real world VCL™ (Virtual Cadaver Lab): a fully 3D interactive Virtual Human Anatomy with a unique pressure based stylus interface, which allows the user to touch, manipulate and dissect the virtual model. VFL™ (Virtual Forklift Safety Training): provides forklift operators the opportunity to drive the exact model of forklift in a simulated environment that is modeled after the environment they will actually drive the forklift in. Over the last few years Tactus has become a global competitor in the virtual environment market where its customer base includes users in over 40 countries.

CORVID TECHNOLOGIES

145 Overhill Drive, Mooresville, NC 28117
704-799-6944 • www.corvidtec.com

Corvid Technologies was founded in September of 2004 with 5 employees and the vision of providing high fidelity computational physics analysis support to the defense and automotive industries. Currently, Corvid has 109 employees, primarily engineers and scientists, with projected growth to 115 in 2014. Corvid's annual gross revenue is in excess of $25 million. Headquartered in Mooresville, NC, Corvid also has offices in Alexandria, VA, and Huntsville, AL. Corvid maintains a 100 out of 100 Commercialization Index in the SBIR program.

While Corvid's customers began with, and still include, the Missile Defense Agency and General Motors Racing, they have expanded their customer base significantly. Sponsors now include US Army Research, Development, and Engineering Command (ARL, AMRDEC, TARDEC), Program Executive Office (PEO) Combat Systems and Combat Support Systems, PEO Ground Combat Systems; USMC PEO Land Systems; the Air Force Research Laboratory; and the Naval Sea Systems Command. Specifically, the SBIR program has helped grow the vehicle survivability portion of Corvid's revenue to 45% of their total revenue, all since this segment's entry onto the market in 2010.

Corvid is engaged in collaborative programs with Sandia and Lawrence Livermore National Laboratories, as well as Concurrent Technologies Corporation, Raytheon, Lockheed, Northrop Grumman, BAE Systems, General Dynamics, Textron, Navistar, and Oshkosh. Corvid has developed exciting research relationships with a number of small businesses and universities around the country.

Historically, Corvid's core competencies have been focused in high fidelity computational physics, including fluid dynamics, shock physics, and structural mechanics as well as coupled analyses covering all of these disciplines. These areas require expertise in material science, aeromechanics, high strain rate and strain mechanics, and numerical methods. Corvid develops its own computational codes and has shown these to be accurate and predictive across a broad range of problem classes. To provide solutions to their customers, they maintain a 16,500 CPU supercomputer system, allowing them to conduct thousands of large scale, system-level computations, annually. As such, the Corvid methodology results in not only predictive, but productive simulation outputs, used routinely for parametric studies within system design programs and solving challenging problems in niche application areas. Corvid utilizes their high fidelity modeling and simulation approach to predict the performance, effectiveness, and survivability of a plethora of systems.

Corvid also integrates into Test and Evaluation groups within their customer base to bridge the gap between simulation and test to enhance the value of both. Corvid maintains a rapid prototype facility capable of supporting a wide range of needs from innovative instrumentations development to test rig construction to concept evaluation prototypes. This link between predictive simulation and test support brings significant value to each customer across a broad range of applications.

NOVAN, INC.

422 Emperor Boulevard, Suite 200, Durham, NC 27703
919-485- 687-8701 • www.novantherapeutics.com

Novan Therapeutics is a privately-held, clinical-stage specialty pharmaceutical company bringing the power of nitric oxide to dermatology and wound care. Research has shown that nitric oxide, one of the most studied molecules in human physiology, is responsible for vasodilation, inflammation regulation, tissue revitalization, cancer cell eradication, and the killing of invading microorganisms. Given its active roles in normal cellular function and wound healing, the breadth of potential healthcare applications for nitric oxide-based therapies is staggering.

Novan's core technologies solve the previous delivery issues with nitric oxide by covalently binding the gaseous species onto solid macromolecules. This enables Novan to engineer control over both loading and release rates to generate a diverse pipeline of nitric oxide-releasing new chemical entities. Novan is currently developing a range of drug products incorporating this technology into topical gels, creams, ointments, and wound dressings. Due to its stability, controlled release, and matrix versatility, Novan's platform technology can be used to develop a myriad of non-substitutable drug products which can be tailored to treat specific skin conditions. Much of Novan's success has resulted from funding by federal SBIR programs; the Company has received more than $7M in funding from the Department of Defense, National Institutes of Health (NIH), and National Science Foundation (NSF) to advance the development of this innovative platform technology.

Novan was built around the pioneering research of Drs. Mark Schoenfisch and Nathan Stasko at the University of North Carolina, Chapel Hill, who realized that their work on stabilizing nitric oxide could result in a new age of pharmaceuticals. Since licensing the technology from the University and beginning operations in Research Triangle Park, North Carolina in 2008, Novan has been steadily advancing research and developing products for an increasing number of therapeutic indications. In a time when outsourcing and virtual companies are commonplace, Novan has developed the on-site capabilities to perform drug development and manufacturing. Novan has established sophisticated analytical methods specific to nitric oxide and the instrumentation necessary for conducting raw materials release, in-process testing, and the generation of certificates of analyses. The Company's facilities include multiple class 10,000 clean rooms and the ability to manufacture the active pharmaceutical ingredients and finished dosage forms in accordance with good manufacturing practices (GMP). This has allowed the Company to develop, compound, package, and release semi-solid, cost-effective products for Phases 1 and 2 clinical trials. NSF contributed significantly to the advancement of Novan's manufacturing capabilities through SBIR funding.

PARION SCIENCES

2800 Meridian Parkway, Suite 195, Durham, NC 27713
919-313-1180 • www.parion.com

Parion Sciences is an early stage development company dedicated to the treatment of diseases resulting from defects of the innate defenses provided by mucosal surfaces. Parion's novel technologies target pulmonary and ocular diseases in which the ability to protect the mucosal surface is compromised.

Parion is committed to providing effective treatments for diseases with unmet medical needs. Our company was originally founded on advancing our proprietary epithelial sodium channel ("ENaC") blockers for pulmonary disease. In addition to advancing ENaC blockers for pulmonary diseases, Parion is leveraging our research and development expertise in epithelial biology to expand into new indications and approaches.

Parion Sciences, as an active participant in the SBIR program, has received tremendous value and support from the services and funding provided by SBIR awards. Through the contributions provided by SBIR awards, Parion has been able to significantly progress multiple projects from target validation through clinical studies for novel pulmonary, oral, and ophthalmic medications that address unmet medical needs. Parion allocates SBIR funding to conduct those studies that best de-risk the asset at its stage in development, such as a pre-clinical disease model or proof of concept clinical study.

Parion has successfully created the scientific and clinical packages that have resulted in corporate partnerships, which are able to advance programs through more costly clinical development. Importantly, the SBIR funding has assisted Parion in its goal of remaining a patient-centric organization that is driven by the quality of our science and not investor financial returns. As a result of the SBIR program, Parion has five funded drug development programs in various stages of pre-clinical and clinical development.

IRIS MEDIA, INC.

258 E. 10th Avenue, Eugene, OR 97501
541-343-4747 • www.irised.com

Brion Marquez, a principal at IRIS Educational Media, is an innovator in translating social-behavioral research into practical applications that tangibly improve the lives of groups and individuals through change in unhealthy or unproductive behavior patterns. Mr. Marquez's work bridges the gap between social dysfunctions and their effective treatments through motivating, engaging, respectful, and effective programs. Working as principal investigator, instructional designer, media developer, writer, technology designer, and project director, Mr. Marquez and the IRIS Ed team have developed an array of media-based interventions, web applications, and other communication technologies that provide skill-based solutions. Marquez merges communication arts with rigorous scientific inquiry, and has forged collaborations with scientists in education, social behavior, child development, substance abuse, and trauma, as well as with communication specialists such as producers, writers, web programmers, graphic artists, and actors.

He agrees with critics who fault web-based interventions for insufficient innovation when this versatile tool is merely used to disseminate information. Behavior change, Marquez believes, is much more likely when individuals are offered dynamic models that demonstrate changes rather than telling people what to do. When observational learning is linked to practice and feedback, the effect on behavior is powerful. IRIS Ed has shown that scientifically-valid materials should be presented dramatically, graphically, humorously, and realistically. When that happens, audiences respond positively, self-efficacy increases dramatically, and individuals make changes in behavior that improve their lives.

Marquez's career began as a writer and video producer of commercials, music videos, and product presentations, but he quickly became interested in using video as a medium for modeling skill-based strategies. This led to using his writing and directorial skills to assist research scientists who saw the power of modeling as an instructional tool. In time, Marquez and IRIS Ed began initiating their own projects in partnership with eminent research scientists. Raised bilingually in Cuba and Puerto Rico, Marquez has developed several SBIR-funded Spanish language programs addressing the health and social needs of immigrants. Film's visual, story-telling, and modeling impact is a powerful engagement and learning tool for audiences with a wide range of literacy skills. Programs developed for immigrant audiences include video-based parent management training, divorce education, Latino para-educator intervention, and home study skills program for middle school students.

Marquez and colleagues at IRIS Ed are responsible for: 42 Phase I and II awards, all resulting in commercialized programs (on DVD and online) that are directly marketed by IRIS Ed and its licensed distributors; an online library of over 40 media-driven, skill-based social-behavioral programs available to schools, parents, and social service organizations via a web-based Learning Management System (www.irised.com); 12 Telly Awards for excellence in non-broadcast media; and publication of research findings in peer-reviewed journals.

ACTUATED MEDICAL, INC.

310 Rolling Ridge Drive, Bellefonte, PA 16823
814-355-0003 • www.actuatedmedical.com

Actuated Medical, Inc. (AMI) (Bellefonte, PA) was founded in 2006 with a vision to integrate controlled actuation technologies into medical devices to improve patient outcomes. AMI's medical devices allow clinicians to perform faster, easier and safer procedures. AMI's diverse engineers, designers, and manufacturing experts continually engage with clinicians to develop patent-protected medical devices that are clinically important and commercially viable. SBIR funding is one mechanism that AMI uses to take these products from concept to manufacturing scale-up to market.

AMI's Innovative Motion™ medical devices can be licensed, spun out into new entities, or sold as technology packages to strategic partners. Included in the device development cycle are strong quality assurance, regulatory, reimbursement, and intellectual property strategies. After successful development and testing, regulatory approvals are obtained in the US and Worldwide. Patent applications are pursued in the 5 major medical markets. AMI currently has 6 issued patents. AMI's flexible manufacturing capabilities allow small- to mid- scale production to support market evaluation and growing sales. AMI removes financial and regulatory risks for strategic partners with a process-oriented design plan that is funded by SBIRs, Angel investors and strategic partners. The process and a capital-efficient mindset ensure devices are through regulatory and to the market, with the highest standards and the lowest possible cost.

AMI's business model was successful for their first device - TubeClear®, being funded by a National Science Foundation Phase IIB SBIR. TubeClear restores patency to clogged feeding tubes, in patient, in minutes. The first TubeClear patient was a soldier at Walter Reed National Military Medical Center. In March 2014, Actuated Medical signed a distribution deal for worldwide sales with Corpak Medical System (Buffalo Grove, IL), a worldwide leader in feeding tube products. The partnership with Corpak will enable deployment throughout the world. AMI will continue adding new models to TubeClear to expand this product line and further improve patient outcomes. A pediatric version of TubeClear is being funded by a Phase II SBIR with the NIH/NICHD. The conclusion of this SBIR will be a pediatric clinical study (pending) at the Children's Hospital of Philadelphia. TubeClear has received FDA clearance enabling USA sales and is CE Marked enabling Outside USA sales. In March, TubeClear was recognized as a 2013 Finalist for the Pennsylvania BIO Patient Impact Award.

This year AMI also launched a second device - GentleSharp™. It is a vibrating needle system that reduces the pain in laboratory animals during blood sampling that is being funded by an NIH/NIA Phase II SBIR. GentleSharp was debuted at the AALAS 2013 National Meeting. GentleSharp is being sold by worldwide by Braintree Scientific and AMI. The first sale was in March 2014 to a major pharmaceutical company.

Besides the devices currently featured on our website (i.e., TubeClear and GentleSharp), Actuated Medical has 5 other products that will be launched between 2014 and 2017. AMI is a full-service firm with US-based designer, developer, and manufacturer that is certified ISO 13485:2003, ISO 14971:2007, and a women-owned business.

ChemImage Sensor System

7301 Penn Avenue, Pittsburgh, PA 15208
412-241-7335 • www.chemimage.com

ChemImage Corporation, a leader in hyperspectral and Raman chemical imaging technology, provides innovative instrumentation, analysis software, contract services and expert consulting to government, industrial and academic organizations. The company's proprietary, state-of-the-art imaging technology has many applications, including defense, security, pharmaceuticals, forensics and biomedical diagnostic research, which can reveal critical chemical and biological information from a variety of material systems.

In 2001, ChemImage's flagship product, the FALCONTM Raman Chemical Imaging Microscope, was recognized with an R&D 100 Award as one of the most significant new products in 2001. The FALCON was proven to have clear benefits in areas of pharmaceutical research, biomedicine, food products, cosmetics, polymers, and the semiconductor industry. The events of September 11, 2001, had a significant impact on ChemImage's direction. ChemImage's demonstrated capabilities in airborne pollution monitoring, molecular Chemical Image analysis of inhalable drugs, and experience in analysis of biological materials allowed the company to focus on the detection of anthrax and other bio-weapons of mass destruction. By January 2002, ChemImage had demonstrated the applicability of its FALCON technology to the real-time, reagentless detection of anthrax. Since that time, ChemImage's technology has been exploited for biothreat detection by a number of US government agencies.

In 2002, the company sought venture capital to accelerate its development of the company in its primary market segments: pharmaceutical research, forensics, threat detection, and biomedicine. Significant investment allowed the company to protect and develop new inventions and applications which are protected by an extensive portfolio of patents, including 149 granted and 48 pending. Beginning in 2003, the wars in Iraq and Afghanistan saw an increase in the proliferation of improvised explosive devices (IEDs). ChemImage added standoff explosive detection and disturbed earth detection to its growing portfolio of capabilities. Since 2005, ChemImage has received numerous contract awards, totaling over $40M, from Department of Defense organizations and the Joint IED Defense Organization to utilize its standoff chemical imaging technology to combat the threats of IED-use by insurgents and terrorists.

In 2013, we launched ChemImage Sensor Systems (CISSTM). CISS develops laboratory, stand-alone, handheld, portable, robot-mounted and vehicle-mounted shortwave infrared (SWIR) and Raman based hyperspectral imaging (HSI) sensors for real time, wide area surveillance and standoff detection of explosives, chemical threats, and narcotics for use in both military and commercial contexts. These are innovative products that utilize proprietary chemical imaging technologies to address the challenges associated with chemical, biological, and explosive (CBE) threat detection and counter IED.

Today, ChemImage Corporation has 70 employees and continues to expand its threat detection, forensics, biomedical, pharmaceutical analysis, and analytical lab service capabilities and carry on its leadership in advancements to molecular Chemical Imaging technology.

QorTEK, Inc.

1965 Lycoming Creek Road, Williamsport, PA 17701
570-322-2700 • www.qortek.com

Based in Central Pennsylvania since 1998, QorTEK has been providing leading edge power, piezoelectronic, and intelligent device solutions to industries including Defense, Aerospace, Automotive, Medical, Oil & Gas and Underwater. Much of its business is comprised of custom designs that support the US military. Considered by many to be World leader in piezoelectronics, holding many of the patents for advanced piezoelectric and magnetostrictive drive electronics, QorTEK design, fabrication, integration and testing are all accomplished within its facilities. Its wide range of advanced piezoelectric ceramic parts, devices, and electronics are all 100% USA manufactured. Advanced power products available through QorTEK extend from regenerative microdrives to the foremost ultra-compact/high power density electrical power supplies supporting Navy ASW programs in underwater detection, interdiction and communication.

QorTEK patented technologies presently provide some of the World's most advanced sensors, actuator and energy harvesters. QorTEK advanced technologies are meeting critical piezoelectric electronics/product needs in Aerospace, Automotive, Oil & Gas, Industrial and Medical industries, providing affordable, space-saving solutions. QorTEK's patent awarded Ceramic Power is the World's first switching power supplies and sensors that simultaneously eliminate transformer magnetics, processors and opto-electronics. This high performance new technology is now beginning to revolutionize the missile and space power equipment industry.

QorTEK is known for its abilities and competence in development and production in all areas of electrical engineering and electronics. Because of is end-to-end competency it can accurately match ceramic actuators, sensors and energy extraction mechanisms with matching high performance electronics. QorTEK is able to supply versatile, fully integrated modules for control, actuation, sensing and energy extraction, meeting individual design needs.

HemoShear LLC

1115 5th Street SW, Charlottesville, VA 22903
434-872-0196 • www.hemoshear.com

HemoShear, the human disease biology company, develops and applies first-in-class human disease systems to create safer and more effective therapies for patients. By integrating its proprietary technology, scientific expertise and advanced discovery and predictive analytics, HemoShear provides a unique lens to interpret biological mechanisms and human disease. The Company is changing the way drugs are discovered and developed, departing from traditional scientific methods and animal studies in favor of biological systems that more accurately represent human response. HemoShear works in partnership with pharmaceutical and biotechnology companies spanning discovery through clinical applications to uncover new targets, resolve previously unknown mechanisms, identify novel attributes of drugs and select candidates with superior efficacy and safety profiles.

Guided by our mantra and commitment to "Think Human", we passionately believe that through our innovative science we have the potential to profoundly impact human health.

Our continued ability to innovate and impact human health has been made possible by more than $8million in SBIR funding from four separate institutes of the National Institutes of Health.

SBIR
Hall of Fame

INTUITIVE SURGICAL, INC.

1266 Kifer Road – Building 1, Sunnyvale, CA 94086
408-523-2100 • www.intuitivesurgical.com

Intuitive Surgical, Inc. is a robotics systems manufacturer working in the field of invasive surgery. Founded in 1995, Intuitive Surgical created the groundbreaking Da Vinci Surgical System, a robotic assisted minimally invasive surgery system that has revolutionized the industry. Since its inception, Intuitive Surgical has become a global leader in the field of minimal invasive surgery. Specifically, the Da Vinci system enables surgeons to perform invasive operations through small incisions and allow surgeons to see what's going on in a patient from an egnomic console. As a result, surgeons are now able to operate with enhanced vision, precision and control, which decreases the cost and complications brought on by open procedures. In 2000, merely a year after the technology's invention, the FDA cleared the system, which made it the first robotic system available for laparascopic surgery.

Since 2000, the FDA has also cleared the technology for chest and cardiac procedures performed with adjunctive incisions as well as urological, gynecological, pediatric and transoral otolaryngology procedures. The image guidance technology assists surgeons in areas that are difficult to access and reduces the surgeon's vision. In addition to its practical surgical implications, this device can even be utilized for surgical training. The military has used the Da Vinci system to train field surgeons, and it has been a tool constantly used at the Walter Reed National Military Medical Center. Intuitive Surgical has made major contributions to the field of medicine.

Intuitive Surgical is yet another example of the impact of SBIR awards. They have received 5 SBIR awards, two of which have been converted into Phase II grants. With the development of this high tech tool with SBIR involvement, worldwide procedures with this product has grown to over 16 percent.

Intuitive Surgical's realm of success extends beyond the operating room. In 2013, their revenues exceeded $2.265 billion dollars, a 4% increase from 2012. Thanks to its resounding success, Intuitive Surgical has generated $880 million dollars in cash flow from operations and ended the year with $2.8 billion dollars in cash and investments. Intuitive Surgical is a perfect example of how an SBIR grant supported company can translate their medical innovation to financial success.

The Da Vinci has applications across all spectrums of minimally invasive surgery and has been optimized for complex multi-quadrant procedures. For more than a decade this company has provided patients with a cost effective and more technologically advanced alternative to large incision surgeries. The Da Vinci is paving the way for dynamic future surgical procedures.

ULTRA-SCAN CORPORATION

4240 Ridge Lea Road, Buffalo, NY 14226
716-832-6269

Ultra-Scan Corporation is a biometric industry veteran working to address the problem of identity theft, which affects 15 million Americans annually. Costing consumers almost $48 billion dollars each year, the detriment of identity theft continues to grow at an alarming rate. To address this issue, Ultra-Scan Corporation has developed a product that employs ultrasound technology to capture high quality fingerprint images in order to meet performance demands set by users demanding the best in biotechnology. After a series of successful SBIR research grants, the breakthrough Ultra sonic sensor has been embraced by financiers and scientist alike.

To innovate in the biometric industry, Ultra Sound teamed up with the U.S. Army Research Office to pioneer new fusion technology that has been crowned the optimal industry standard. Through leveraging internal funding, government contracts, and SBIR resources, Ultra-Scan has created an innovative and commercialized product. With massive support from 16 SBIR/STTR awards and a 100% win rate for Phase II efforts, Ultra-Scan generated $50 million dollars in investment capital that has helped secure 95 patents and allowed Ultra-Sound to grow into a world leader in ultrasonic fingerprint and biometric fusion. In early 2013, Fortune 500 Company and fellow SBIR beneficiary Qualcomm acquired Ultra-Scan and over 30 years of biometric subject matter in the process.

Ultra-Scan has not only been an innovative technology company, but a beacon of employment stability. This company has maintained revenue growth of 20% during recent years. Ultra-Scan continues to identify new business opportunities and secure critical contracts, stabilizing employment with this great company.

As a result of leveraging the numerous resources of the SBIR program, Ultra-Scan has successfully commercialized more than 100 biometric identity products ranging from hardware, software, installation support and performance monitoring services. Ultra-Scan, with support from SBIR program, has not only developed a breakthrough biometric device for national security, but also established itself as a global leader in the biometric industry and a model for SBIR success.