THE BEST IN SBIR

SMALL BUSINESS INNOVATION RESEARCH

2015 Tibbetts Awards | SBIR Hall of Fame

Monday, June 15, 2015

White House Eisenhower Executive Office Building-Washington DC

SBA

U.S. Small Business Administration

DEDICATED TO THE MEMORY OF

ROLAND TREFETHEN TIBBETTS

June 27, 1924 - October 27, 2014

"Through his innovation, Mr. Tibbetts has touched millions of lives around the globe over the last three plus decades. In the world of innovation and research surrounding small businesses, he was truly one of a kind."

-Maria Contreras Sweet, SBA Administrator

October 30, 2014

A great pioneer and small business champion, Roland Tibbetts, who is widely acknowledged as the father of the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs was lost this year. By facilitating small business' access to the Federal research and development marketplace, Mr. Tibbetts, revolutionized the innovation landscape in this country and further improved its economic vitality. As we award the coveted Tibbetts Awards to a distinguished and deserving group of firms, organizations, and individuals, let us remember that in celebrating these innovators, we are also celebrating Roland Tibbetts legacy through his amazing innovation, SBIR.

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.

Congratulations to The Recipients of The 2015 Tibbetts & SBIR Hall of Fame Awards

One key way the SBA accomplishes these goals is through two programs: one the Small Business Innovation Research (SBIR) and the other 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 tens 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 and organizations who have supported the SBIR Program.

SBIR Hall of Fame

The SBIR Hall of Fame recognizes companies and individuals 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.

2015 TIBBETTS AND
SBIR HALL OF FAME AWARD
CEREMONY KEYNOTES

MARIA CONTRERAS SWEET // **SBA ADMINISTRATOR**

Maria Contreras-Sweet became the 24th Administrator of the U.S. Small Business Administration and a member of President Obama's Cabinet on April 7, 2014. She is a successful entrepreneur, business executive, and state cabinet official. Throughout her career in the public and private sector, she has been a champion of diversity, access to capital and equal opportunity for all Americans.

Prior to her arrival in Washington, Contreras-Sweet founded the first Latino-formed commercial bank in California in more than 35 years. She was the first Latina to hold a state cabinet post in California. As Secretary of Business, Transportation and Housing, she managed 13 departments, managed a $14 billion budget and a workforce of more than 42,000 employees during her five-year tenure. She led in the creation of the state's Department of Managed Health Care and its Office of Patient Advocate and in the implementation of a $2.1 billion housing bond that stimulated the state's economy. Contreras-Sweet was a founding director of The California Endowment, a multi-billion dollar philanthropic health foundation. She was appointed by the United States Senate to serve on the Federal Glass Ceiling Commission, created to help break down barriers between women and the executive suite.

Born in Guadalajara, Mexico, Contreras-Sweet is a first-generation immigrant who came to America at age 5 with her mother and five siblings. She is married to Ray Sweet, and they have three children and a granddaughter.

CATHERINE "CADY" COLEMAN, PH.D. (COLONEL, USAF, RET.)

Dr. Cady Coleman is a NASA Astronaut with more than 180 days in space, accumulated during two space shuttle missions and a six-month expedition to the International Space Station (ISS). She launched and landed aboard the Russian Soyuz spacecraft and acted as the lead robotics and science officer during her tenure aboard the ISS, performing the second-ever free flyer robotic capture from the Space Station. After returning from Expedition 27, Coleman served as the Astronaut Office Lead for Visiting Vehicle Supply Ships from NASA's commercial space partners Space-X and Orbital Sciences, as well as the Japanese Space Agency. She is currently on a detail assignment to the Chief Technologist's Office at NASA HQ as the NASA lead for the Launch Program, a joint venture with the US Department of State, USAID and Nike.

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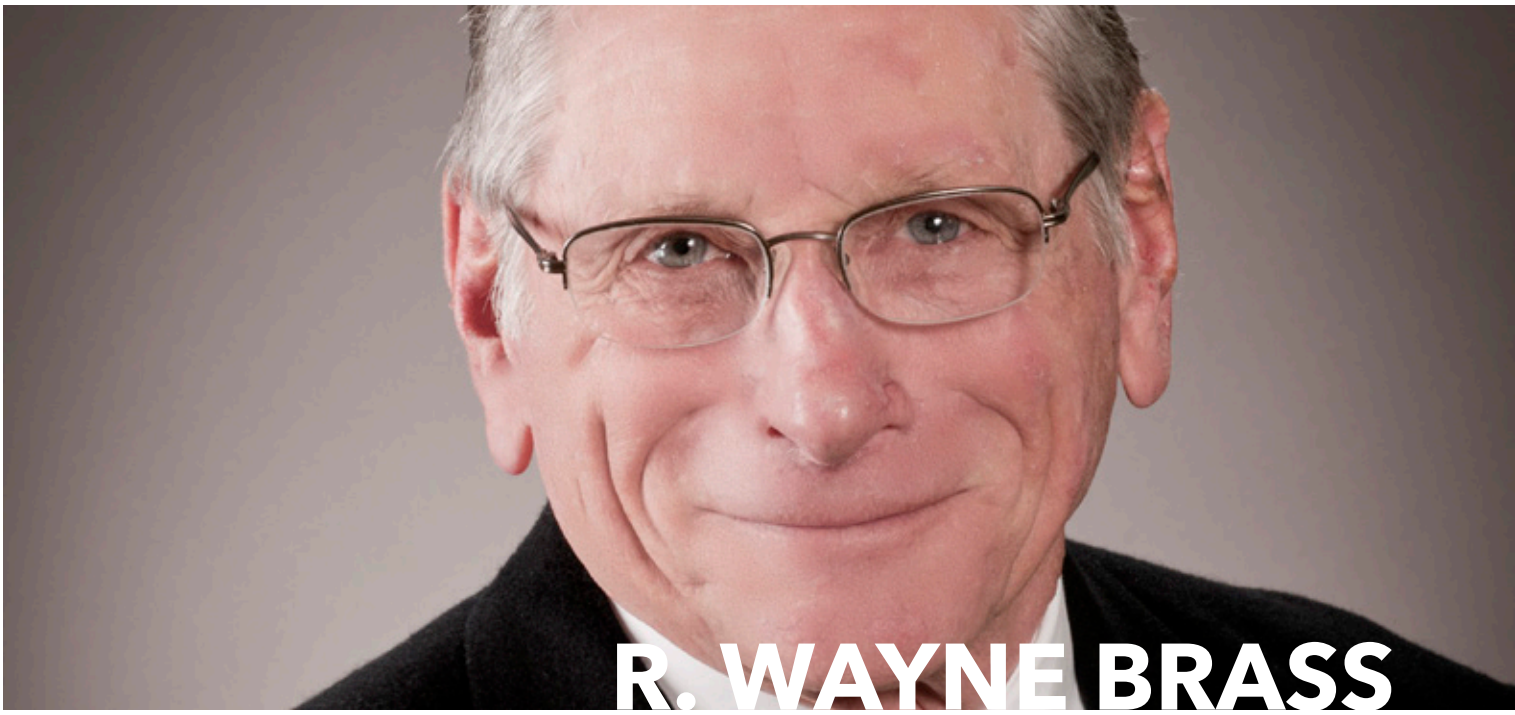
INDIVIDUALS

Results and recognition are two terms that Wayne Brass, a Certified Business Technology Consultant for the Florida Small Business Development Center (FSBDC) at Pinellas County Economic Development is familiar with. For the past nine years he has designed, promoted, and been the lead consultant for the SBIR/STTR grant program in a 10 county area of the West Coast of Florida. Brass also provides his knowledge and expertise to other FSBDC consultant's throughout the state of Florida to assist their clients and expand the outreach of the SBIR/STTR grant program.



Recognizing that Florida companies were relatively unaware of or underutilizing SBIR/STTR grants, the Enterprise Florida SBIR/STTR Phase 0 grant program was established by the States commerce organization, Enterprise Florida. Brass is one of the founding members and still active in the Enterprise Florida SBIR/STTR Phase 0 grant Steering Committee. As a voting member of this committee, he reviews all SBIR/STTR Phase 0 applications from throughout the State and is a voting member to approve the grant awards. During these nine years, approximately 90 companies have applied for the Phase 0 grant funding, resulting in 72 awards. Out of the 72 grant awards, 21 were clients of Brass (all clients submitted by him have received the Phase 0 award). The purpose of this program is to promote the SBIR/STTR grant program and get more Florida companies to apply with the ultimate goal of more Florida companies receiving a Phase I award. Then hopefully, the companies would move to the Phase II award.

Brass is a strong supporter of technology-based firms and provides coaching/mentoring to small businesses seeking technology grants via the SBIR/STTR program. Over the past several years, he has provided more than 400 hours of no-cost consulting services to over 30 companies interested in the SBIR/STTR program. He is committed to assisting companies in understanding the qualifications for the SBIR/STTR grants, assisting them in finding the correct agency, reviewing the RFP, and mentoring them of the steps necessary to be considered for the grant. He has created a community of SBIR/STTR professional supporters and mentors to assist companies with those special services. As part of this work, Brass provides connections between companies needing assistance with the application and professional grant writers, reviewers and editors. Additionally, he has delivered more than 50 presentations to interested groups on SBIR/STTR grant programs and to encourage companies to participate and apply for the grants.

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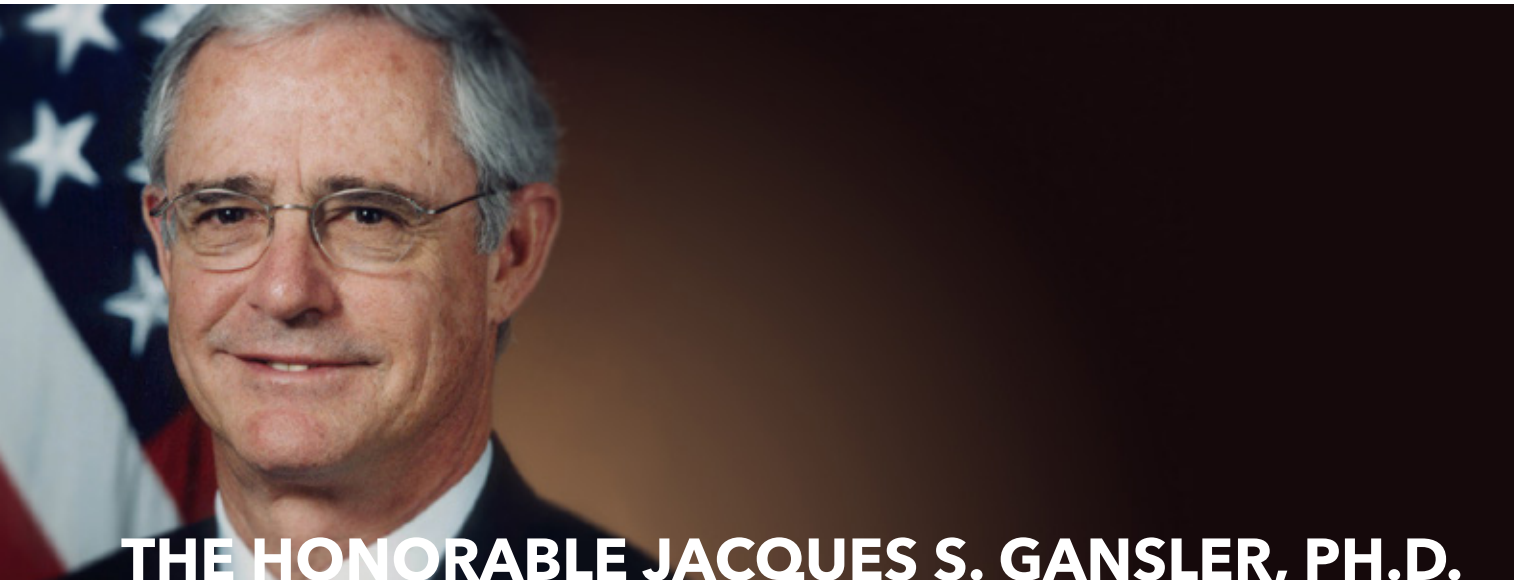
www.SBDCTampaBay.com/pinellas

As a component of the 2000 reauthorization of the SBIR program, Congress instructed the National Research Council to conduct a comprehensive assessment of the program. Dr. Jacques Gansler, former Under Secretary of Defense (for Acquisition, Technology and Logistics) led the effort as Chair of the Committee for Capitalizing on Science, Technology, and Innovation. The committee found that the SBIR program was, "sound in concept and effective in practice," and its non-partisan assessment proved instrumental in the improvement and reauthorization of the SBIR and STTR programs in 2011. Subsequently, the Committee has published a series of reports on the SBIR program in a number of federal agencies (beginning with an extensive volume on the DoD program in 2014.)



THE HONORABLE JACQUES S. GANSLER, PH.D.

Dr. Gansler is a Professor and the first holder of the Roger Lipitz Chair in Public Policy and Private Enterprise in the School of Public Policy at the University of Maryland. He is also the Glen L. Martin Fellow in the A. James Clark School of Engineering, and is an Affiliate faculty member in the Robert H. Smith School of Business; both also at the University of Maryland.

He previously held a variety of private sector and government positions. As the third ranking civilian at the Pentagon from 1997 to 2001, Dr. Gansler was responsible for all research and development, acquisition reform, logistics, advanced technology, environmental security, defense industry, and numerous other security programs. This experience provided him unique insight into the execution of the SBIR program at the largest participating agency (DoD). In addition he has held senior management positions in industry; e.g. at: ITT, Raytheon and TASC; and has served on a number of corporate Boards of Directors; e.g. at: iRobot, SERCO, Plasan (U.S.), and others. His various experiences in academia, government, and the private sector, contribute to his broad understanding of public-private partnerships and innovation policy, making him the ideal leader for the assessment of the SBIR program.

Throughout his career, Dr. Gansler has written, published and taught on subjects related to his work. He is the author of Defense Conversion: Transforming the Arsenal of Democracy, MIT Press, 1995; Affording Defense, MIT Press, 1989, The Defense Industry, MIT Press 1980 and Ballistic Missile Defense: Past and Future, National Defense University Press, 2010; and a number of these have been translated into foreign languages (including in China). In addition, he has published numerous articles in Foreign Affairs, Harvard Business Review, International Security, Public Affairs, and other journals as well as newspapers, and he frequently provides Congressional testimony. He is a member of the National Academy of Engineering and a Fellow of the National Academy of Public Administration.

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University of Maryland
College Park, MD 20742

For more than a decade, Ms. Gentry has adeptly used the SBIR/STTR program to further research and development for Department of Defense needs. As a technical point of contact from 2005-2007, she championed topics for both the Air Force Research Laboratory (AFRL) and the Missile Defense Agency aimed at improving thermal management and nanotechnology materials. Her success was recognized with her appointment as AFRL's F-35 collocate from 2008-2011, with responsibilities for coordinating with F-35 Joint Strike Fighter (JSF) Program Office to define, support, and transition topics, especially in the arenas of materials and manufacturing. For the past four years, she has been the F-35 Science and Technology Lead. In this position, she is responsible for F-35's Navy and Air Force SBIR Program Executive Officer (PEO) processes from topic selection to transition planning for 20-30 topics per year across a wide spectrum of technologies, including structures, propulsion, vehicle systems, training, sustainment, avionics, prognostics and health management, weapons, etc.

MS. AMANDA GENTRY

She has been directly responsible for at least nine direct SBIR transitions to the F-35, resulting in more than $530 million in cost savings and avoidance, with an additional 10+ on target to transition within next two years and many more that partially transitioned or lead to knowledge advancement. She coordinated a unique focus area on manufacturing technology SBIRs and developed a novel approach that made the best of F-35 manufacturing schedule slips to insert advanced technologies for rate readiness and cost reductions. She leverages other non-SBIR sources of funding such as Rapid Innovation Fund, Manufacturing Technology, and others in order to mature technologies sufficiently for PEO acceptance. PEO (JSF) has received seven SBIR derived Rapid Innovation Fund awards of which one has transitioned, two are close, and the remainder in work. Ms. Gentry also shows her commitment to SBIR/STTR and small business through advocacy to peers, large business partners, and senior DoD leadership as well as outreach to small businesses including one-on-one's and coaching at various forums and conferences.

Ms. Gentry's commitment to usage of SBIR/STTR technologies and heavy coordination with prime contractors has allowed the F-35 Program to leverage government R&D investment to mature technologies and reduce risk of insertion. This has provided an opportunity to numerous small businesses across the country to contribute to the newest advanced fighter platform for the Navy, Air Force, Marines, and allies, leading to cost savings and performance enhancements ultimately resulting in improved warfighter capability.

F-35 Lightning II Joint Program Office
200 12th Street South
Suite 600
Arlington, VA 22202

Effectively utilizing the SBIR program has been a critical component of Peter Grazaitis' success with the U.S. Army Research Laboratory's Human Research and Engineering Directorate. Mr. Grazaitis is extremely active in marketing, building the necessary stakeholder teams and then transitioning the SBIR technology for use by the Army and DoD – transitions that have resulted in significant cost savings to the Army as well as new technology deployment. He has co-authored six SBIR topics and served as the government technical manager and Contractor Officer Representative (COR) on seven SBIR topics and has transitioned technology to Army Agencies and Program Managers with three of the six topics reaching Phase III, representing a transition success rate of 50%. For example, one of Mr. Grazaitis' SBIR topics that led to the development of the GoTo-War Simulator (GTW), has received more than $5M in funding outside of the Army Research Laboratory to date.

PETER GRAZAITIS

Mr. Grazaitis has developed a strategy for success that utilizes the Army's SBIR program as a vehicle of choice to develop warfighter relevant research topics to initiate and conduct the fundamental proof of concept R&D needed to attract stakeholders. In his role, Mr. Grazaitis coordinates technical demonstrations, and briefing of the technology to prospective Army and DoD stakeholders, describing the potential benefits of the technology to solve problems and issues of interest to the stakeholders. Mr. Grazaitis actively cultivates stakeholders and has successfully obtained outside funding from a variety of sources outside of ARL's mission funding line to fully develop, mature and transition the SBIR technologies to Army agencies for use. Additionally, due to Mr. Grazaitis' subject matter expertise in the SBIR program, he is often sought out for advice by his colleagues who are contemplating submitting proposals.

His successful philosophy is centered on the belief that for technologies to be used on a day-to-day basis by warfighters, the government SBIR topic Lead/COR must be extremely proactive in examining Army as well as DoD issues. Having the vision to identify how an SBIR project can address those issues, and the leadership to bring these technologies to the appropriate agencies, leads to stakeholder teams that achieve transition of the SBIR technology to become or support Army or DoD programs of record. This process has significantly broadened his knowledge of not only the challenges and issues faced by the Army, but the DoD as well.

U.S. Army Research Laboratory
Aberdeen Proving Ground, Maryland 21005
www.arl.army.mil

In-depth knowledge and a collaborative spirit make Mr. Thomas Piazza an invaluable asset to the United States Special Operations Command (USSOCOM) and the SBIR community as a whole. During his 14 year involvement with the program, Mr. Piazza has been the stabilizing force underpinning the USSOCOM SBIR program. His in-depth knowledge of every aspect of the SBIR program ensures smooth transitions and seamless continuity of operations during leadership changes within the office.

THOMAS J. PIAZZA

Mr. Piazza has been responsible for a variety of important process improvements and initiatives within the program. For example, identifying, tracking, and documenting the record breaking number (42) of USSOCOM SBIR success stories that now populate the USSOCOM SBIR portal public web site. These stories provide examples of USSOCOM Research and Development efforts that transitioned to the hands of warfighters. He has also analyzed the work being done on each USSOCOM SBIR pursuit and stepped in as needed to provide advice and guidance to both Government and contractor personnel. His efforts helped participants to regain momentum and in turn, expedite the delivery of critical technology to Special Operators. Additionally, his efforts have contributed to the USSOCOM SBIR Program achieving the highest average commercialization rate of all the participating DoD Components for over four years.

Reaching out to other agencies and actively promoting the SBIR program have been central to Mr. Piazza's work with USSOCOM SBIR. By working with other agencies' past SBIR/STTR contracts, Mr. Piazza has been able to leverage these solutions to satisfy USSOCOM technology needs and has coordinated with the Science and Technology Transition Team Lead to investigate how technologies could transition in other ways than initially intended. In addition to attending the annual Special Operations Forces Industry Conferences, and National SBIR conferences, Mr. Piazza has conducted one-on-ones and panel discussions at outreach events with numerous representatives from private industry to discuss how the SBIR Program can grow their business and the numerous opportunities that exist within the Federal Government to expose and transition innovative technologies. To further promote the program and increase internal organizational visibility, Mr. Piazza introduced the idea to advertise SBIR success stories on the closed circuit TV at USSOCOM and obtained prototypes of successful technology pursuits for public display. The success stories and prototype displays have provided a continuous reminder that the SBIR Program is available to satisfy USSOCOM technology needs.

Mr. Piazza is an employee of BRTRC Federal Solutions that is subcontracted to SRA International, Inc. that provides contract support to USSOCOM, Special Operations Forces – Acquisition, Technology, and Logistics, Science and Technology Directorate.

USSOCOM Special Operations Forces
Acquisition, Technology, and Logistics SBIR Support
7701 Tampa Point Boulevard
MacDill AFB, Florida 33621-5323

By staying true to his roots as a scientist and innovator, Mr. Larry Pollack, the Program Manager for the Chemical and Biological Defense SBIR/STTR programs at the Joint Science and Technology Office for Chemical and Biological Defense (JSTO-CBD) in the Chemical and Biological Technologies Department at the Defense Threat Reduction Agency (DTRA) has worked with other DoD Component programs and industry to share and leverage best practices to continue to enhance SBIR/STTR processes. Mr. Pollack has served as the CBD SBIR Program Manager for over 10 years; under his leadership, the CBD SBIR Program has seen over $140M in Phase I and Phase II awards.

LARRY POLLACK

In his role, Mr. Pollack works with small business firms to match next-generation technologies with warfighter technology requirements, which requires significant interaction with the small businesses. In order to seek out the next nugget of innovation that may successfully meet the technology needs of the Department of Defense's Joint Chemical and Biological Defense Program, Mr. Pollack regularly speaks at small business outreach events, conducts webinars and participates in all forms of advertising opportunities for small businesses. For Mr. Pollack, the new paradigm of the SBIR and STTR programs is to make each small business a success story through commercialization of their innovations – whether it be through facilitating new connections between small businesses and potential stakeholders within the Department of Defense, or investigating alternative markets where the state-of-the-art technologies have wide reaching applications. These criteria frame his gauge of success with the Chemical and Biological Defense Program.

Another metric of success for Mr. Pollack is small businesses that are ultimately acquired by industry through acquisitions and mergers. To date, he has been involved with five small business companies developing chemical and/or biological technologies that have been bought by large industrial firms. Many SBIR derived technologies supporting the chemical and biological defense mission are now available for purchase through the large business companies. Mr. Pollack is viewed as a leader amongst his peers and his contributions to the SBIR program encompass the ideals and spirit of the Tibbetts awards. He is passionate in his commitment to stimulating technological innovation, advocating on behalf of the program and initiating new approaches and collaborations that benefit the goals of the program.

Joint Science and Technology Office for
Chemical and Biological Defense,
Defense Threat Reduction Agency (DTRA)
MSC-6201_J9/RD-CBO 8725
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2015 TIBBETTS AWARDEES

ORGANIZATIONS

LAUNCH is an open innovation platform that was founded by NASA, NIKE, Inc., the U.S. Agency for International Development (USAID) and the U.S. Department of State to identify and foster breakthrough ideas for a more sustainable world. LAUNCH aims to move beyond incremental change and make an impact at a system-wide level. LAUNCH is currently focused on positively transforming the system of materials and manufacturing, which can have dramatic social, environmental and economic impacts on the world. In order to harness the innovation needed to advance this system, LAUNCH has issued a series of global challenges to address key barriers. Its current challenge focuses on green chemistry, a crucial component in a sustainable materials and manufacturing system.

LAUNCH

The relationship between SBIR and LAUNCH flows two ways. LAUNCH has supported several innovators who have received an SBIR award, and through the course of the program worked with them to accelerate the path to commercialization, which can include securing additional funding. Additionally, the Small Business Administration and a number of SBIR funding agencies have been active participants in LAUNCH's program. Through these relationships, LAUNCH is positioned to channel eligible innovators to the SBIR program. LAUNCH's Collective Genius community continues to deepen and grow as does its community of followers through social media, which means that LAUNCH innovators benefit from access to an expansive network. The success of LAUNCH's innovators stems largely from the access to capital, as well as access to system actors and decision makers - LAUNCH and SBA's synergistic relationship brings together these two elements.

LAUNCH operates in annual cycles, supporting up to 10 innovators per cycle. Having successfully launched five challenges (Water, Health, Energy, Beyond Waste and Fabrics) and currently running a sixth (Green Chemistry), LAUNCH itself has become recognized as an innovation, and has been replicated by other platforms in the public and private sectors. LAUNCH has supported 60 innovators, 8 of which are SBIR recipients.

www.launch.org

Centralizing and catalyzing innovation are the ideas behind the New Orleans BioInnovation Center (NOBIC). In 2002, the Louisiana Department of Economic Development funded a statewide network of three wet-lab incubators to diversify the state economy and capitalize upon the significant biomedical research taking place at Louisiana's higher education institutions. Through this initiative, the New Orleans BioInnovation Center facility opened in 2011 to facilitate commercialization, and it has now nearly reached full occupancy. The Center has helped innovators launch more than 90 new companies, create 275 jobs, and raise over $80 million to develop pioneering health, biotechnology, and environmental technologies.

NEW ORLEANS BIOINNOVATION CENTER (NOBIC)

Today the Center is a highly successful non-profit business incubator dedicated to fostering entrepreneurship and supporting Louisiana innovators as they develop life-saving new technologies. With assistance from NOBIC, five different companies won 7 awards totaling $3.23 million between 2011 and 2014 from NSF and NIH. These businesses employ 26 staff members with average fulltime salaries of $60,000. To help achieve this success, the Center formed a Commercialization team of graduate students, interns and post-graduate fellows who provide direct assistance to entrepreneurs in developing business plans, raising capital, devising clinical and regulatory strategies, and implementing go-to-market plans. This team reviews SBIR/STTR grant applications, performs outreach initiatives to potential applicants, holds educational events on the programs and proposal preparation, and supports innovative state-level programs to increase Louisiana participation in the SBIR/STTR programs. Since the SBIR/STTR proposal process is often a tricky one, especially to newcomers, the Commercialization team provides active guidance to investigators and entrepreneurs on SBIR and STTR applications, including both Phase 1 and Phase 2 applications. This includes a particular focus on building strong commercialization plans within proposals.

In order to increase awareness and advocacy of the program, the Center's Commercialization team has hosted or supported eight events to educate more than 200 entrepreneurs and researchers on SBIR/STTRs since 2011, as well as facilitated discussions with program officers on SBIR/STTR programs. They also serve on committees for Louisiana Phase 0 grants, designed to provide initial funding for SBIR grant proposal preparation, and they assisted with the development of a Louisiana R&D tax credit application fast-track policy for SBIR/STTR award recipients. The Center is also the first LEED Gold-certified laboratory building in New Orleans, offering 66,000 square feet of state-of-the-art office, wet-lab, and conference space to conceive and cultivate new bioscience ideas. The Center has positioned itself as a unifying hub of collaboration by partnering with local universities, economic development organizations, the regional business community, capital sources, and other community stakeholders to achieve its mission of building a strong biotechnology ecosystem in Louisiana that produces competitive jobs and businesses for the regional economy.

1441 Canal St.
New Orleans, LA 70112
www.neworleansbio.com/

MassVentures helps turn ideas into millions of dollars. Originally formed as the Commonwealth of Massachusetts' venture capital arm, MassVentures recognized that small businesses do not often have the expertise, capital or bandwidth to transition from a federally supported R&D organization to a product-generating, market-driven enterprise. In 2012, MassVentures established the START program to help Massachusetts-based companies commercialize technologies developed under SBIR and STTR contracts. Since first receiving their awards, the 30 winners have raised $50 million in equity, debt and grants.

Massachusetts' companies have led the nation in per capita SBIR awards, the product of the area's top-tier research and academic institutions. Now, MassVentures is doing its part to help these companies lead the nation in transition and commercialization of SBIR awards. START winners receive grants of $100,000 to $500,000 staged over three years based on progress made toward commercialization. In addition to funding, START winners receive expert mentoring in building high-tech companies, IP protection, marketing strategies, business plan writing and how to obtain outside investment. By June 30, 2015, $9 million will have been allocated to the program and distributed to 40 deserving projects. The twenty early winners (2012 -2013) have increased their number of total employees more than 140% and product revenues have more than tripled.

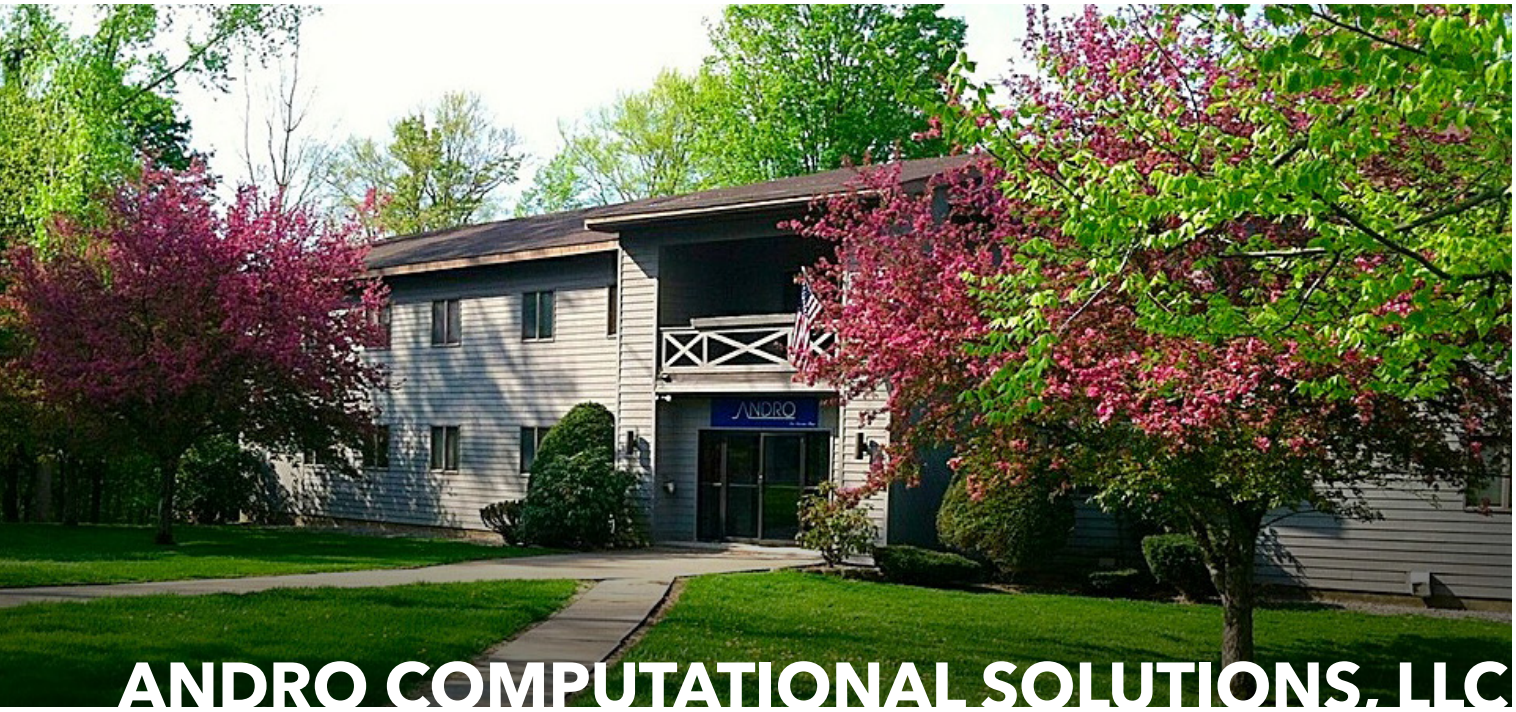
MassVentures has worked closely with government officials and NGOs to address the challenges facing SBIR companies seeking to commercialize their technologies and to inform them about the START model. The company believes that based on the success of the program in its first three years, START may serve as a model and successfully replicated on a national level. At present, the State of Massachusetts provides $3 million annually to support the START program. Overall, the effectiveness of MassVentures is exemplified by the fact that over 80% of its funding has come from gains on investments with only 14% of its support coming from appropriations from the Commonwealth of Massachusetts. In addition to funding, the MassVentures' START program has helped bring together an ecosystem of more than 200 unique companies, reviewers, service providers and advisors to create the next generation of successful technology companies to help drive economic growth.

308 Congress St.
Fifth Floor
Boston, MA 02210
www.mass-ventures.com

2015 TIBBETTS AWARDEES

COMPANIES

Not only has ANDRO Computational Solutions, LLC developed and commercialized an expert system software toolkit called E3Expert under an SBIR project, it has also developed expertise in commercializing an array of other technologies through the SBIR/STTR program. Founded in 1994 in response to needs expressed by the Air Force for the development of innovative, next-generation Electromagnetic Environment Effects (E3) modeling and simulation tools to analyze cosite and spectrum coexistence issues, ANDRO has gone on to receive five Phase III awards recently. These Phase IIIs have come from the Air Force, Navy, Army, Missile Defense Agency, and have involved industry participants Lockheed Martin, Raytheon, and Assured Information Security, Inc. In addition to SBIR successes, the Rapid Innovation Fund (RIF) Program was instrumental in ANDRO's efforts during 2014 to transition/commercialize its Sensor Resource Manager (SRM) technologies, cited to Congress as one of two success stories of the FY11 RIF Program for SBIR/STTR technology transition.



ANDRO COMPUTATIONAL SOLUTIONS, LLC

During ANDRO's first two years of operation, it was essentially just a one-person scientific R&D business run by the Owner, Mr. Andrew L. Drozd. ANDRO has received nearly 32 SBIR/STTR awards with approximately 50% ongoing or transitioning to Phase II and several have gone or are in the process of going to the Phase II Enhancement (II.5) stage. ANDRO has also developed strategic partnerships and entered into agreements with industry players Thales, General Dynamics and others. As a result of SBIR/STTR contracts including a number of non-SBIR awards, the company continues to experience significant growth by more than doubling in staff size and more than tripling in office space, including the establishment of Software Defined Radio Test Labs. The company also anticipates a commercial division spinoff to service the Unmanned Air System (UAS) industry leveraging its SBIR/STTR technologies.

The company has evolved from a highly niche-oriented company into one that is now able to diversify and operate on multiple technology fronts with low overhead and a very responsive and successful track record. Today, ANDRO is one of a handful of small, scientific R&D businesses that is addressing national-level needs related to a rather unique area – spectrum policy reform that engenders cyber security and the future of secure broadband communications and infrastructure. In doing so, ANDRO is ushering in the 22nd Century Cyber-Digital-bit Age – a road that was paved in part by the SBIR/STTR Program.

The Beeches Professional Campus
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Rome, NY 13440-1943
www.androcs.com

Aspen Aerogels is an energy technology company that designs, develops and manufactures innovative, high-performance aerogel insulation used primarily in large-scale energy infrastructure facilities. The company won its first SBIR award in 2001, its first year in business. Since 2001, the company has grown from an 8 employee operation with $2 million in revenue to a 250 employee operation with well over $100 million in annual commercial revenue. Aspen Aerogels became a public company in 2014, raising $75 million for future expansion and investment in their business.

ASPEN AEROGELS, INC.

The SBIR funding Aspen Aerogels received was extremely valuable in leveraging existing working capital and in providing early revenue for the company. This funding supported the development of products that were considered innovative and fit for purpose by exacting customers. The funding allowed Aspen to leverage its investments in developing strong business support functions in sales and marketing, finance, and manufacturing. In turn, this allowed the company to establish itself and survive the very difficult times encountered in commercializing a new technology.

Aspen's products provide two to five times the thermal performance of widely used traditional insulation in a thin, easy-to-use and durable blanket form. Its end-use customers select these products where thermal performance is critical, and to save money, reduce energy use, preserve operating assets and protect workers. Aspen introduced two new key product lines, Pyrogel and Cryogel, in 2008 and has sold more than $350 million of its products globally, representing an installed base of more than 150 million square feet of insulation. The company's products are used by leading global companies in key energy market segments including Refining, Petrochemical, LNG, Power, and Subsea. Additionally, Aspen Aerogels sells its innovative insulation products into military and private aerospace applications, building and construction, transportation, apparel and OEM markets.

The company and employees support many programs and organizations that have lasting and positive impacts on the quality of life in East Providence, RI and Northborough, MA. For example, Aspen sponsors $2,000 in annual technology scholarships given to graduating students at East Providence High School that show the highest aptitude in STEM subjects. Aspen also provides monetary or technology equipment support to the local Boys and Girls Clubs in East Providence, RI and Northborough, MA. The R&D organization in Aspen Aerogels is represented by women in half of its scientist and engineer positions. Aspen has worked extensively on a number of significant R&D programs with local universities including Tufts University and MIT in which students have been supported. Aspen has also worked with other universities across the U.S. on R&D projects.

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Northborough, MA 01532
www.aerogel.com

Derived from its founders' expertise in medical imaging technology, and inspired by a profound personal connection to autism, Behavior Imaging has the vision, market foresight, and passion to bring to market unique digital health imaging solutions. Behavior Imaging Solutions (BIS) develops imaging and digital health solutions that lead to earlier diagnosis and better treatment options for a variety of behavioral health and special education applications. The company's revolutionary "EHR-light" video platforms and "Behavior Capture apps" enable remote health and education assessments, improved clinical trial coordination, and the foundation for a global remote autism diagnostic assessment service. Taking four years to win its initial SBIR award, BIS was incorporated in 2005 to invent and gain meaningful adoption for its Behavior Imaging® technology as a means of increasing disabled people's access to healthcare via technology.

BEHAVIOR IMAGING SOLUTIONS

Before receiving the SBIR award, neither investors or health and education organizations would commit to Behavior Imaging's (BIS) innovations due to lack of proof that its solutions could be effectively adopted to improve access for autism diagnosis or treatment, or to improve workflow to treat larger behavior-based disorders. However, after SBIR's supportive product development and research, BIS was able to demonstrate the effectiveness of its tool. The support of SBIR enabled BIS to garner enough clinical efficacy proof that its technologies are now utilized by leading health organizations across the globe, the military, state departments of education, and at rural clinics and orphanages. Professionals are now using Behavior Imaging to improve people's lives who suffer from debilitating autism symptoms, or from other behavior and mental disorders.

The majority of the BIS team and its advisors began as volunteers to prototype its innovations, but because of SBIR, the company has been able to make and test commercial-grade innovations. Behavior Imaging Solutions has expanded its revenue by more than 130%, expanded its employee base and partnerships by 80%, and is currently exploring the acquisition of a therapy service-related local company. The company's technology is actively used in hundreds of schools in 31 states in the U.S. and 4 other countries and is emerging as an important alternative for: 1) critical behavior assessments for students with autism; and 2) cost-effective skill assessment for the nation's most disabled student population. Cost savings per student have been calculated to save school districts at least $12,000/year.

413 W. Idaho St.
Boise, ID 83702
www.behaviorimaging.com

Bexion Pharmaceuticals is developing innovative cures for cancer by developing a first-in-class biologic, BXQ-350, with a novel mechanism of action for targeting and eliminating tumor cells. Mechanism of action studies support potential efficacy across a broad range of tumors, while minimizing "off-target" effects. Clinical trials for BXQ-350 will include treatment of Glioblastoma multiforme (GBM), a deadly form of brain cancer. Further clinical studies may expand the market for other types of cancers, both as the primary or adjuvant therapy. In 2013, Bexion was the only therapeutic recipient of the prestigious "Bridge Award" of nearly $3 million to support testing of BXQ-350 in the clinic. Bexion has also earned a partnership with the Nanotechnology Characterization Lab, the NCI's specific resource and knowledge base for cancer researchers with "nano" drugs.

BEXION PHARMACEUTICALS

Knowing how to target the right SBIR awards has been the driving factor in helping Bexion Pharmaceuticals grow their company while developing game-changing cancer drugs. Bexion received its first Phase I SBIR award within the first year of founding the company and has won three Phase I awards, one Phase II and one Phase II Bridge SBIR grant totaling close to $5 million. The company has been able to leverage these Federal SBIR funds to attract an additional $18 million in state funds and private investment capital.

Bexion Pharmaceuticals was founded in 2006 with two employees and technology licensed from the Cincinnati Children's Hospital Medical Center. In February of 2015, Bexion obtained FDA Orphan Drug Status for the primary active in BXQ-350 against GBM. The company currently employs six individuals with advanced degrees in science and business, and multiple "best of breed" consultants and collaborators in toxicology, regulatory affairs, manufacturing and clinical research. Bexion partners major development, production and manufacturing functions that retain and create additional jobs. Bexion Pharmaceuticals plans to develop its products through Phase I and Phase II clinical trials, seeking additional funding options through acquisition, partnering, or licensing by major pharmaceutical companies, who will carry on Phase III clinical development, product launch, and sales and marketing. Bexion also has a number of out-licensing opportunities in oncology diagnostics and drug delivery. The company promotes its strong belief in STEM education and training, diversity in the workforce, as well as local/regional economic development by being an active community participant in education, R&D, and economic development in the Northern Kentucky and Cincinnati, Ohio areas.

632 Russell St.
Covington, KY 41011
www.bexionpharma.com

Delivering cutting edge technology for in vivo delivery of siRNA, miRNA, long dsRNA and other RNAi agents is Bioo Scientific's specialty. Bioo Scientific had been in business for 4 years when it was awarded its first NIH award in 2007 and has since grown its employee number fourfold. The Phase I and Phase IIB grants Bioo Scientific received from the National Science Foundation (NSF) were used to develop new technologies for in vivo delivery of siRNA, miRNA, long dsRNA and other RNAi agents. The company's SBIR grants have allowed Bioo Scientific to develop products based on new and innovative technologies in a number of fields, to hire employees, and to purchase equipment needed for product development.

As a result of SBIR funding, Bioo Scientific has launched a number of innovative products, allowing the company to spearhead research in a number of areas while maintaining an average growth rate of 31% during the last 4 years. Bioo Scientific continues to improve the delivery technology developed with these grants by increasing the drug delivery efficiency, specificity, safety and user-friendliness of nucleic acid delivery to create additional value.

The company credits the NSF SBIR program with providing them the opportunities for growth and fostering interest to leverage funding to grow the biotechnology industry and help train new industry professionals. Bioo Scientific has been involved in training programs with Austin Community College, the University of Texas at Austin, Texas A&M and most recently has hosted training for the Foreign Agriculture Service (FAS) in association with the National Center for Foreign Animal and Zoonotic Disease Defense (FAZD) center. Pertaining specifically to the NSF Phase II and Phase IIB grant, Bioo Scientific has trained several student interns, many of whom joined Bioo Scientific as full time employees working on the grant product during this period.

Bioo Scientific offers a complete portfolio of products and services for academic, pharmaceutical, biotechnology and molecular diagnostic laboratories, and organizations that perform food and feed safety analysis. Bioo Scientific's product lines include a complete portfolio of products that reduce bias and increase the sensitivity, flexibility and speed of next-generation sequencing. Worldwide distribution of these life science solutions has led to Bioo Scientific winning the *FrankfurtRheinMain Export* Award and the President's *"E" Award for Exports.*

7050 Burleson Rd.
Austin, TX 78744
www.biooscientific.com

Transforming research into real solutions for real problems is what Celdara Medical aims to achieve by accelerating science to improve human health. For Celdara Medical, SBIR funding is essential for the development of early stage, high-risk, high-reward therapeutics, and essential to their business. In January 2015 Celdara spun out and sold "OnCyte, LLC," to Cardio3 Biosciences (C3BS; now Celyad) for $490M in cash, stock, and milestones, plus royalties on sales. OnCyte is built around a set of SBIR-funded cellular therapies, originally identified at Dartmouth Medical School, and built into a clinical-stage division within Celdara Medical. Celyad is now planning multiple clinical trials to advance the lead candidate into multiple sites and oncology indications, and both companies continue to collaborate on next-generation therapies.

CELDARA MEDICAL, LLC

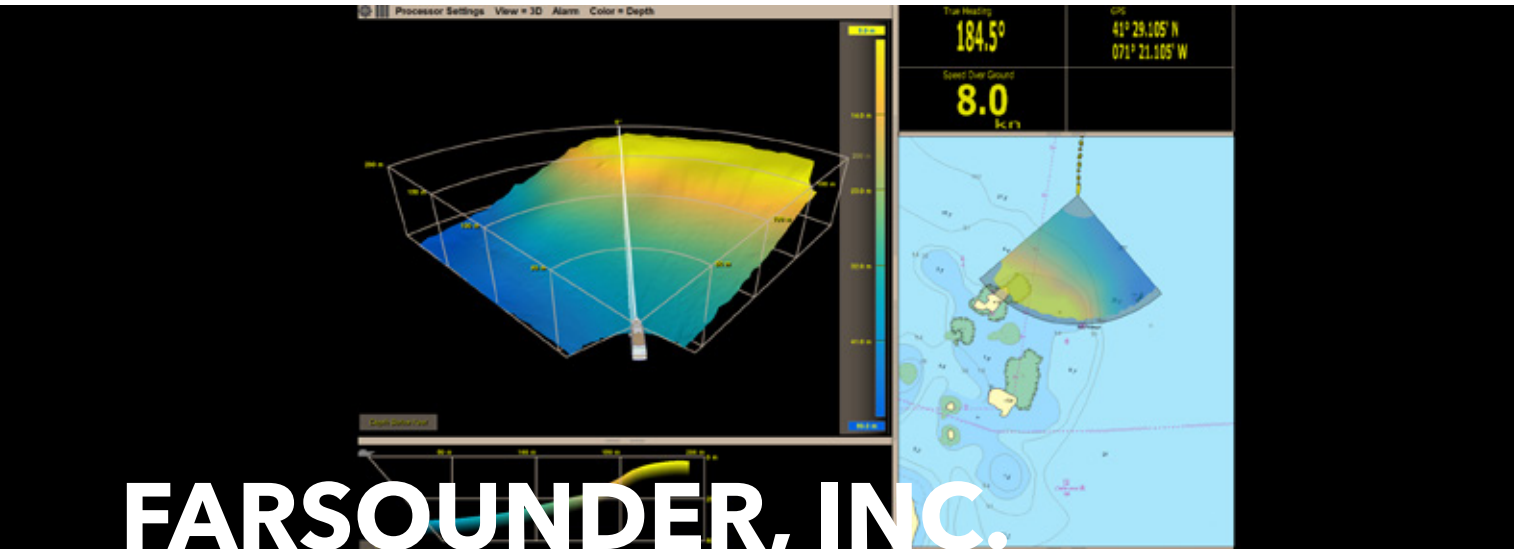
SBIR funding has allowed the company to work at a stage of development that would otherwise be avoided – and if the early stage is avoided, it is to the detriment of everything else downstream, including new marketed therapies and ultimately, patients. The impact of SBIR funding was realized early in the company's life. Eleven months after the company was founded, they received an SBIR award. Thanks to their Phase I and Phase II SBIR awards the company was able to achieve nine objectives including 100% survival and 100% durable protection against tumor re-challenge in murine models of cancer and initiation of a Phase 1 clinical trial, which is currently ongoing at the Dana-Farber Cancer Institute.

Celdara now has fourteen full-time and 6 part-time employees, as well as dozens of consultants and contractors, figures that do not include Celyad or OnCyte. In 2011 Celdara helped to establish an affiliate, Virtici LLC, in Seattle, which is running independent programs in additional areas, including metabolic diseases. Most recently the company opened an office in New York City to expand their network of innovators.

A driver of Celdera's success has been their ability to engage academia. The company is currently working with more than 30 academic institutions representing over $5B in annual R&D spending to identify, vet, and advance the most clinically promising therapeutics and diagnostics. SBIR funding has allowed Celdara to advance these technologies into the clinic and the market, and to build core competencies in key areas from pipeline management to regulatory affairs to preclinical development.

16 Cavendish Ct.
Lebanon, NH 03766
www.celdaramedical.com

Effectively navigating the SBIR commercialization process appears to come naturally to FarSounder, Inc. FarSounder is one of the world's leading sonar innovators and has set new standards for vessel navigation and safety. FarSounder's technology and products have revolutionized marine navigation as they are uniquely capable of generating a true, 3-dimensional image ahead of a vessel at navigationally significant ranges.



FARSOUNDER, INC.

Soon after launching its first navigation tools, the company began to explore other applications for its acoustic sensor and soon realized the technology was useful for a number of other applications. One obvious application was for security products. With SBIR Phase I and II awards from the Department of Homeland Security, FarSounder was able to accelerate the development schedule of its breakthrough technology. This helped propel FarSounder's technology into the realms of shipboard protection and security systems. Using a variation of the technology that provided ships with images of obstacles in front of them, the company was able to provide images that detect, classify and track objects like SCUBA divers approaching harbors, oil rigs, moored ships or sensitive waterfront military and industrial locations.

The company received its first SBIR award in 2005, four years after being incorporated. The company has tripled its staff since receiving its first SBIR. FarSounder's early products were navigation tools that provided surface vessels with images of the seafloor below them as well as in-water obstacles. The company has worked over the years to continue to improve and expand its navigation and situational awareness products. Further advancements in its navigation capabilities and tools were also supported by a SBIR Phase I from the DOD/Navy as well as other government funded programs closely aligned with the company's product road map.

The FarSounder team has developed practical solutions to marine navigation and situational awareness. As new areas of exploration and shipping open up in polar regions, FarSounder's technology offers a higher level of safety than has been available previously for expeditionary, work boat, passenger and other ships transiting these relatively uncharted regions of the Arctic. Additionally, FarSounder focuses on developing solutions to other underwater challenges in the areas of fisheries sustainability and marine mammal protection. Advances in these areas have also benefited from the companies past SBIR projects.

Exports represent 85% of product sales and FarSounder products can be found around the world helping all sorts of ships avoid underwater dangers. The opportunities offered via the SBIR program to advance FarSounder's technology has helped the company stay competitive in a global marketplace.

151 Lavan St.
Warwick, RI 02888
www.farsounder.com

Changing the course of aviation history through SBIR is just what FlexSys, Inc. accomplished when it flew the world's first shape changing aircraft wing. In 1998, company founder and the inventor of FlexFoilTM Variable Geometry Control Surfaces, Dr. Sridhar Kota received an Air Force SBIR Phase I contract to prototype and test an Adaptive Compliant Wing and in 2000, Kota received an Air Force SBIR Phase II contract to further demonstrate and test compliant design of shape-changing control surfaces. FlexSys was founded in 2001 to build and test various structural and wind tunnel models and encouraged by continuing success, the Air Force Research Laboratory (AFRL) provided enhancement funds under an SBIR Phase II. In 2006, FlexSys designed and fabricated a prototype wing section and affixed it to the underside of White Knight aircraft for extensive flight tests, which showed fuel efficiency improvements, and in 2009 AFRL funded an SBIR Phase III program to modify a Gulfstream-III research aircraft, replacing its conventional flaps with a FlexFoil™ Adaptive Compliant Trailing Edge (ACTE). NASA joined the AFRL-FlexSys team in 2009 for the final phase of the technology maturation, the flight test of ACTE.

FLEXSYS, INC.

On November 6, 2014, FlexSys, AFRL, and NASA achieved a milestone that the aviation industry has been attempting to reach for 50 years - FlexfoilTM ACTE technology finally proved that a practical, lightweight, seamless shape-morphing wing is possible. This invention is expected to save 4-12% in fuel costs in an industry that spends over $200 billion yearly on jet fuel, and where improvements of a mere 1% are considered significant. FlexFoil™ technology also eliminates gaps that produce airframe noise and, according to NASA, it is expected to reduce aircraft noise by 40%.

Funded by the Air Force SBIR program – (Phase I-1998, Phase 2 -2001-08, and Phase 3 -2009-2015), totaling nearly $20 million, the technology has now matured to TRL 6+ ushering in a new frontier in aviation and enabling significant reductions in fuel burned, emissions, cost and noise. The company now has 7 full time and 5 part time employees with plans to hire two more full-time employees this year. Dr. Sridhar Kota is also a Professor of Mechanical Engineering at the University of Michigan – Ann Arbor. FlexSys has actively engaged UM faculty through research contracts, provided part-time and full-time positions to UM students and has also licensed related technologies from UM.

2205 Commonwealth Blvd.
Suite D
Ann Arbor, MI 48105
www.flxsys.com

Making the right decisions is the basis of Frontier Technology, Inc.'s (FTI) innovation and business success. Founded in 1985, FTI began as a niche DoD engineering research services company, and was in business for one year before receiving its first SBIR award. This and subsequent SBIR awards provided the critical seed funds that enabled FTI to use its engineering expertise and client knowledge to develop innovative engineering and program decision aids. Through their innovative technology and business strategy, the company grew from 10 employees in 1995, to their current staff of over 100 employees. In the last year FTI has commercialized prior SBIR technologies into SBIR Phase III contracts valued at over $120M. As a result of these recent contracts, FTI and its subcontract partners have added over 90 full-time equivalents of direct labor effort during this timeframe.

FRONTIER TECHNOLOGY, INC.

The core of FTI's Decision Support Technologies is a clear understanding of Department of Defense (DoD) "Big Data" challenges. Combining that insight with FTI's software development focus to integrate DoD community accepted data into an information technology environment. This empowers DoD decision makers to make much better operational and life cycle decisions. FTI's technologies can find patterns in the data that enable DoD decision makers to make informed decisions that would not be natural without the insight from the FTI tools. The foundation of FTI's recent and future growth is based on its creative technologies combined with the business opportunities inherent in Phase III laws and Sole Source rights. These regulations allow the largest user of FTI's Decision Aid Technologies, the Federal Government, to quickly leverage the company's innovative technology.

FTI's growth is stimulated by a thrust to mature the technologies with a broad commercial focus and by helping its Government customers understand how to benefit from the Phase III laws. The decision aids that FTI developed were found to be valuable to a much larger audience and applications in Government and Industry. An example, of great impact, is the work FTI initiated with DoD working on social and economic restructuring efforts in Afghanistan. This demonstrates the effective adaptation of DoD and FTI developed analytic toolsets for a humanitarian-oriented mission. FTI has also partnered with over 20 colleges and universities in the past several years.

4141 Colonel Glenn Highway
Suite 140
Beavercreek, OH 45431
www.fti-net.com/cm/Home.html

Hybrid Plastics, Inc. has found the right mix when it comes to developing and commercializing its innovative Polyhedral Oligomeric Silsesquioxane (POSS®) nanotechnology based on Nanostructured® Chemicals. The technology and company were originally spun out of the U.S. Air Force Research Laboratory through a NIST Advanced Technology Program grant and has grown from six employees at the time of its first SBIR to 20 employees currently. POSS® is a revolutionary new chemical based on silicon-derived building blocks that provide nanometer-scale control to dramatically improve the properties of traditional polymers, colorants and fillers. In addition to being biocompatible and recyclable, POSS® releases no Volatile Organic Compounds (VOCs), which can have environmental effects.

HYBRID PLASTICS, INC.

Hybrid Plastics' SBIR and STTR funding has been provided through multiple federal agencies and consequently, has corroborated the platform nature and applicability of the technology. The Phase I grants helped to validate the technical merit and utility of the technology. The company's Phase II grants enabled the development of applications to the engineering stage while the Phase III grants enabled collaboration in commercializing specific applications. In December 2005, a Presidential Determination deemed POSS® Nanotechnology to be in the strategic national interest of the United States. This allowed the company to secure facility funding through Title III of the Defense Production Act. The act is to ensure that strategically important technologies continue to be manufactured in the United States. The Title III effort is coordinated by the Air Force from the Wright Patterson Air Force Base in Dayton, Ohio. The company has commercial applications in areas ranging from biomedical, such as synthetic organ replacement; to electronics, such as next generation microchips with reduced feature sizes; from aviation, such as new filter filaments and composites; to rubbers, such as improved downhole oil and gas technology capabilities.

The company is ISO 9001:2008 certified and has received a Frost and Sullivan Best Practices Award. Frost & Sullivan stated, "Hybrid Plastics' customer service is unparalleled in the high performance fillers market." Hybrid Plastics was one of five finalists in Small Times Magazine's 2002 Best of Small Tech Award. The company has received three R&D 100 Awards. Since POSS® is new molecular technology, it has always involved and relied upon academic participation in the STEM disciplines. Early support came through the University of California, Irvine, and Michigan State University and the company's move to Hattiesburg, Mississippi was partly predicated on being close to and working with the University of Southern Mississippi's acclaimed School of Polymers and High Performance Materials. Hybrid has been actively involved with the last two EPSCOR (Experimental Program for Scientifically Competitive Research) grants received by Mississippi from NSF.

55 W.L. Runnels Industrial Dr.
Hattiesburg, MS 39401
www.hybridplastics.com

Getting it right on the first try is exactly what Hydronalix achieved with its first SBIR award through the Navy – at present the company has total Phase III sales of over $4.3 million as a result of a single SBIR Phase I and its current Phase II. Founded in 2009 and based in Arizona, Hydronalix was created to develop small expendable maritime robotic technologies to perform dull, dangerous, and dirty work in the maritime littoral zones around the world. The company's intent is to provide enhanced value added capabilities to first responders, earth scientists, military, and safety to the maritime industry. A single Phase I award preceded the company's first sales revenue and resulted in the hiring of its first employees. Since the Phase II and subsequent Phase III programs started in September 2013, Hydronalix has grown to a permanent staff of 15 employees with temporary or intern production staff ranging up to 10 additional employees in the summer months. In addition to acquiring facilities with 4,000 square feet of space in Green Valley, AZ following its Phase I, the company added a second building for manufacturing and now has 16,000 square feet of production, office, and engineering space.

HYDRONALIX, INC.

Hydronalix's flagship product is EMILY the robotic lifeguard which was selected as the Invention of the Year by Popular Science for Security Category, 7th best Invention of the Year by Time Magazine, Top Eleven Inventions of the Year by Savannah Ocean Exchange, AUVSI Best Innovations of 2011, American Scientific Compelling Breakthroughs 2012, Aviation Week Finalist Innovation of the Year, and runner Up Innovation of the Year by the Canadian Safe Boat Marine Award. EMILY was also selected by Google as one of a small number of innovations to participate in Google After Hours - Infinite Playground event in San Francisco. The EMILY robot systems have already been put to use saving lives in the U.S. by first responder Fire Departments and in many foreign countries including Indonesia and Mongolia for tsunami and storm flood response. In Los Angeles County EMILY is in continuous use during major holiday weekends. Hydronalix has mentored and incubated a second non-affiliated SBIR company (Control Vision), which has now grown to over $1 million in annual revenues, and the company is recruiting other high technology companies to move to Sahuarita, AZ and form a technology cluster. The company participates closely with the local school systems to support STEM and SciTech events.

1691 W. Duval Commerce Court
Suite 141 Green Valley, AZ 85614
www.hydronalix.com

Nanoscale technologies have led to large scale successes for Hysitron, Inc. Founded in 1992 and incorporated in 1993, Hysitron received its first SBIR in 1994 as a three person company and has grown to a 125 person company today. Hysitron's technical innovation is a small (square centimeter) 3 plate capacitive transducer. The transducer was developed into a 3 dimensional Nanoindenter by a SBIR Phase I US Army contract in 1994. Hysitron's patented transducer bridged the gap between existing qualitative Atomic Force Microscopes and the quantitative instruments available at the time, resulting in meaningful technological progress.

HYSITRON, INC.

As a result of Hysitron's innovation, the Army was able to measure ultra-thin laser refractive coatings of canopies and face shields, the Navy was able to develop self-cleaning materials for ships' hulls, and NASA was able to repair the original problem with the coatings on the Hubble Telescope. Also, Defense labs benefited from new knowledge of material behavior, allowing them to solve significant material science challenges, including testing the 100 nanometer (nm) coatings on the disk drives in computers and the 10 nm coatings on the Gillette Mach III razor blades.

Hysitron has sold these instruments to 60 countries and brought that revenue back to the USA. The company has generated $225 million in revenue over the last 21 years of operation, and attributes its global success to the SBIR program. Had it not been for the six SBIR awards, the company would have simply sold its transducer technology into the commodity catalogue sale market.

Hysitron has a diverse work force that is involved with meaningful projects, including the commercialization of the company's SBIR funded technologies. Hysitron's customers are able to achieve their material manipulation goals, which helps the industry innovate and funds more research, students, and methods to make more innovative instrumentation products. Hysitron is a strong proponent of STEM initiatives in the USA, and the company owner, Thomas Wyrobek is a recipient of the 2011 Advocacy Award through its direct support of the Nano-Link Center at Dakota County Technical College in Minnesota; a National Science Foundation and an Advanced Technical Education funded program. Hysitron collaborates with 1,000 academic institutions worldwide on six continents and markets to the related Industries that are the benefactor of those collaborations. Regionally, Hysitron is working with all of the major research institutions in Minnesota, Wisconsin, South Dakota, North Dakota and Iowa, as well as the Tier II Liberal Arts schools with 4 year programs, in addition several 2 year AA degree technical colleges.

9625 West 76th St.
Eden Prairie, MN 55344
www.hysitron.com

LI-COR Biosciences was first put on the map thanks to its innovative and portable technology, but the company's ability to seek out and find new opportunities has helped to keep it there. LI-COR developed the first commercially viable Portable Photosynthesis System allowing scientists to see simultaneous conductance and photosynthetic values in the field. LI-COR was founded in 1971 and received its first SBIR award in 1994 with 98 employees and has now grown to 336 across the globe today. Since 2001, LI-COR has launched more than 50 new products for cutting edge research including drug discovery, global climate change, industrial environmental monitoring, and disease process investigation, and has more than 30,000 customers in more than 100 countries using LI-COR instruments.

LI-COR BIOSCIENCES

One example of the company's success through SBIR relates to a $75,000 SBIR grant to develop a new open-path carbon dioxide analyzer for measuring gas fluxes with a return on investment that literally changed the world. Two years after receiving this award the company released the analyzer that could measure both carbon dioxide and water vapor simultaneously at high speed with precision and accuracy. The instrument has become a standard used worldwide. LI-COR estimates that more than 80 percent of the measurements examining carbon balance of agricultural and natural ecosystems have been made using LI-COR instruments. Much of what we now know about how climate change might influence ecosystems comes from data provided by these instruments. LI-COR's technology, developed with the help of SBIR funding, has made this specific type of scientific work possible.

LI-COR's scientists and engineers are actively involved in the Nebraska, national and global research community by conducting seminars, participating and presenting research in scientific meetings, and publishing work in leading journals. In addition, LI-COR's research team has mentored Nebraska researchers interested in SBIR/STTR funding and has developed excellent relationships with Nebraska economic development organizations. For example, LI-COR has collaborated with the Nebraska Business Development Center (NBDC) SBIR/STTR service program by giving presentations at SBIR/STTR workshops, by participating in the SBIR/STTR advisory board and by acting as an advocate for SBIR/STTR funding in the state of Nebraska. LI-COR Biosciences is a global leader in developing and marketing innovative, high quality instrument systems used in the fields of biological and environmental sciences, climatology, molecular biology, and translational research.

4647 Superior St.
Lincoln, NE 68504
www.licor.com

For Lift Labs, stabilizing technologies have led to a stable and growing business. Lift Labs produces a compact and portable device with a spoon, soup spoon, or fork attachment that detects tremors and uses tiny actuators to stabilize the utensil. Stabilization allows patients with Essential Tremor and Parkinson's Disease feed themselves more easily. The company is a graduate of the National Institutes of Health (NIH) SBIR Program and was acquired by Google Life Sciences in September 2014. Their Phase I SBIR award enabled Lift Labs to perform feasibility testing on the Active Cancellation of Tremor (ACT) device and a Phase II grant led to further development and clinical trials on the ACT device. In addition to the SBIR awards, Lift Lab utilized NIH's Commercialization Assistance Program, which helped the company navigate regulatory hurdles and accelerate the process of bringing its device to the marketplace.

LIFT LABS

Lift Labs is an example of the ability of the SBIR program to seed both innovative, life altering technologies, while generating economic benefits. The founder of Lift Labs, Dr. Anupam Pathak, as a graduate student working on weapon stabilization technology recognized the implications of his work in offsetting tremors. Upon graduating, he established Lynx Design (predecessor to Lift Labs), applied and won Phase 1 SBIR funding as the sole employee. The funding was through the National Institute of Neurological Disorders and Stroke (NINDS) and specifically for small businesses doing research and development on products (devices, therapeutics, diagnostics, research tools etc.) that have the potential to reduce the burden of neurological disease. He conducted the Phase 1 award by himself, the results proved promising and lead to the SBIR Phase II award in 2011.

In 2013, Lift Labs received a small private round of funding enabling it to launch its newly branded product Liftware™, a spoon that uses sensors to detect hand tremors and counteract them to minimize the spilling of food. The initial launch generated a lot of interest online and the product demonstration videos received millions of views. By the summer of 2014, Lift Labs had approximately seven employees, and by fall of 2014, the company had been acquired by Google. Within four years, the technology has gone from concept to product, and now has the opportunity to help millions of Americans with hand tremor to eat more easily.

1600 Amphitheatre Parkway
Mountain View, CA 94043
www.liftware.com

With more than twenty years of experience developing and commercializing technologies, it is easy to say that Orbital ATK's aim is spot on. Science and Applied Technology, Inc. (SAT), the original SBIR awardee for the Advanced Anti-Radiation Guided Missile (AARGM) SBIR program was founded in June of 1988 with its Phase I SBIR award coming just two years later. SAT and its assets, including AARGM SBIR Data Rights, were subsequently acquired by ATK, Inc. in Oct 2002 and later merged with Orbital Sciences creating Orbital ATK, Inc. Throughout its history, the company has grown from a small business of 5 employees to a part of Orbital ATK with approximately 12,000 employees in 20 states.

ORBITAL ATK

Without the SBIR program, the U.S. Department of Defense and NATO's premier Destruction of Enemy Air Defense weapon system would not be fielded today, and the major business growth of SAT, Inc. and its subsequent acquisition by Orbital ATK, Inc. would not have occurred. In this case, the SBIR program was the seed corn that grew an entrepreneur's idea into a major defense acquisition program that is key to providing U.S. and NATO aircrews with the capability they require to protect themselves from enemy air defenses and a business that generates >1,000 jobs a year across multiple states. The AARGM product line now has a United States Navy Budget for procurement funds for the program lifecycle of $1.56B.

One key aspect provided by SBIR rules is the protection of SAT's intellectual property (IP) and conveyance of these rights as part of the acquisition by Orbital ATK. With this protection, the value of the IP was not lost when the small business grew into a large business, in this case through an acquisition. Without these IP protections, the acquisition and subsequent program growth would not have been feasible. Orbital ATK has not only successfully executed and grown the original AARGM SBIR award into an ACAT 1C program, but has effectively worked with other small businesses and integrated its SBIR products into the AARGM production program (e.g. Quinstar MMW technologies and Composite Optics Inc. radome technologies). Through this SBIR and small business outreach, Orbital ATK has ensured the best available technologies are integrated into AARGM and provided opportunities to small businesses. The most unique aspect of Orbital ATK with respect to the Tibbett's Award is it is not a small business; however, it represents the aspirations and goals of every SBIR Phase I program and small business seeking opportunities.

9401 Corbin Ave.
Northridge, CA 91324
www.orbitalatk.com

Out of the Fog Research LLC has grown from two employees when it received its first SBIR award, in 2005, to 9 employees today. Yet more impressively, the company has succeeded in multiple technology transitions to the Department of Defense (DoD) in the past 10 years under 4 separate Phase III contracts. In the first transition, the Navy Cryptological Carry-on Program (CCOP) purchased over 60 RF Distribution units under a $10 million Phase III production contract—the underlying technology was developed during the company's first Phase II SBIR contract.

Out of the Fog is unique in its business strategy in that it aims to provide superior technology to the military and intelligence end-user customers exclusively. The company's business success originates from focused technological pursuits through the SBIR program. They selectively identify opportunities, and then work to build the technology to a sufficient level for transitioning. In one example, the company was awarded a Phase II.5 (additional development) contract with Space and Naval Warfare Systems Command (SPAWAR), and leveraged that work and won a Rapid Innovation Fund contract worth $1.5 million through the Office of Naval Research (ONR). These contracts resulted in a full prototype delivered to the Navy, which in turn led to a Phase III contract with a major prime contractor. Out of the Fog Research has delivered 4 Low Rate Initial Production (LRIP) units and is in the process of proposing a 40-unit production order.

Out of the Fog Research LLC has benefited the U.S. Navy. The company responded to the Navy's need for effective EMI mitigation technology to reduce co-located interference, common battle group generated interference, and jamming signals by developing and transitioning very high performance Cryogenic and Superconducting RF components. Out of the Fog Research LLC has not only developed this cutting edge technology, but also perform testing to demonstrate full Military qualification in harsh environments. Out of the Fog Research LLC has a proven track record of developing and transitioning technology.

Out of the Fog Research LLC has collaborated with four different universities on a variety of SBIR and STTR programs. They have regularly given back to the SBIR community by attending and sponsoring SBIR outreach and transition conferences. Out of the Fog Research was selected by the Navy to be one of five successful SBIR companies to discuss their business model and how they have successfully transitioned SBIR funded technologies. The recorded discussion serves as a learning tool for new entrants into the Navy SBIR program. The company founder and owner, Stuart Berkowitz, Ph.D., has personally helped two New York startups from their initial formation to propose and win SBIR funding from NIH and NSF, which resulted in job formation of an additional 14 jobs.

565 Clyde Ave.
Suite 620
Mountain View, CA 94043
www.outofthefogresearch.com

Precision Combustion, Inc. (PCI) is a clean energy technology company developing and manufacturing advanced performance catalytic reactors and systems for energy and environmental applications. Founded upon winning two SBIR proposals, PCI has grown to become a world leader in innovative catalytic system technology, with 35 employees, 80 U.S. patents, multiple licensees and a wide customer base comprising both large and small businesses as well as the U.S. government. Innovation, effective collaboration and system solutions providing high value and quality are key success factors. Applications include enhanced stability catalytic combustors, high performance Microlith fuel reformers, regenerable air filters, and catalytic steam generators.

PRECISION COMBUSTION, INC.

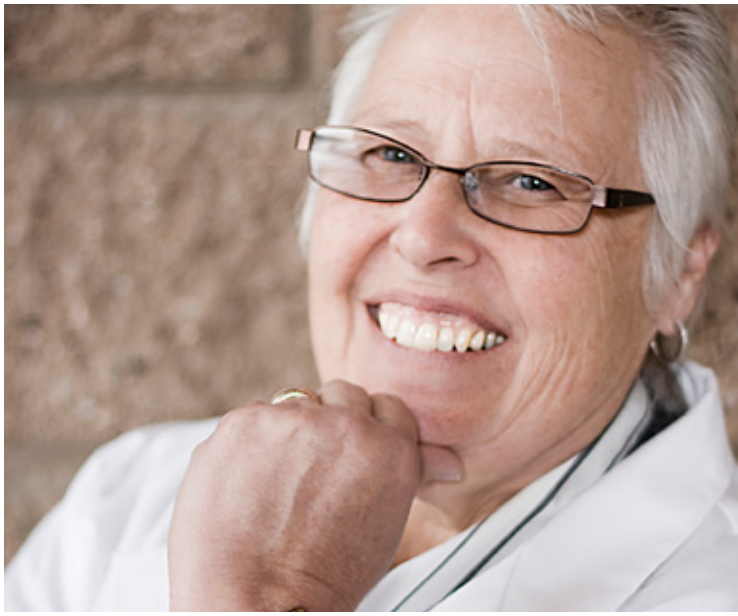
A notable success has been PCI's innovative catalytic fuel reforming technologies, which enable unique performance and high efficiency. Applications include fuel cells and hydrogen generation as well as new opportunities in reciprocating engine and fuel flexibility. These Microlith® Compact Logistics Fuel Processor® reformers, initially developed with Army and Navy SBIRs, combine novel, short contact time catalytic elements with unique process intensified reactor design and balance of plant. These allow military and commercial fuel cells to use conventional liquid fuels, including military logistics fuels containing sulfur such as JP-8. This enables practical military use of emerging efficient, quiet and high reliability fuel cells. Commercial applications are driven by interest in using conventional liquid fuels and natural gas instead of hydrogen.

PCI has used SBIR support for early stage breakthroughs and development, and leveraged that work toward advanced development support and prototype purchase from the Federal government and from private industry. The team's research has also led to spinoff innovations, including improvements in fuel cell design and a spinoff to a simplified fuel conditioning technology for improved combustion in reciprocating engines. Phase III follow-on commercial and DOD funding for the Microlith® reformers is in excess of $20 million to date.

PCI's clean energy technology has advanced American energy efficiency and energy independence while improving environmental impacts. The solutions benefit both customers and the company's active supply chain of other high tech companies and regional manufacturers making subcomponents to PCI specifications. The company has also championed STEM through relationships with universities and public schools, and has actively supported the development of other high growth potential technology businesses. PCI has been the subject of nine agency SBIR success stories, two Army SBIR Achievement Awards (2008 and 2010), and multiple other recognitions, and has a DoD Commercialization Achievement Index in the 90th percentile.

410 Sackett Point Rd.
North Haven, CT 06473
www.precision-combustion.com

Providing workable solutions to scientific and public health challenges help make SenesTech a success. SenesTech is a biotechnology company addressing major urban and agricultural problems by managing rodent populations through a novel fertility control technology. In business for 6 years before receiving its first Phase I SBIR award, the then 5 person company has grown to 25 full time employees today. That first SBIR-funded project allowed the company to prove the efficacy of its product in an urban environment through a pilot project in the New York City Subway System. This project was critical in generating early press and interest in the company.



SenesTech is a game-changer in the field of pest management. By targeting the fertility of rodents, the company hopes to break the ineffective and dangerous cycle of poison-and-kill with a sustainable strategy that gets to the root of the problem - reproduction. This humane approach is not only more effective in managing rodent populations, but it also avoids the often harmful effects poisons can have on the environment. The patented technology is delivered as a liquid bait that disrupts fertility in both male and female rodents. By targeting the reproductive systems of rodents, the SenesTech product causes significant reductions in rodent populations. The reduced reproductive capacity allows the rodent population to be maintained at a low level, avoiding the rebound effect commonly seen after poisoning. The product is low-toxicity and when used as directed is safe for handlers and non-target species such as pets, livestock or wildlife. A recent independent study conducted by the United States Department of Agriculture (USDA) found SenesTech's product 100% effective in rendering wild-caught rats infertile after consuming the bait.

Dr. Loretta Mayer and Dr. Cheryl Dyer, co-founders of SenesTech, also realize the global impacts of SenesTech's innovative technology: crop yields and food availability can be significantly increased by reducing the rodent populations that contaminate and consume the food. Annual economic losses caused by rodents in the U.S. exceeds $27 billion dollars a year. Rodents reduce the quality of life in cities, damage urban infrastructure, destroy crops, contaminate animal feed and transmit diseases. The Center for Infection and Immunity at Columbia University's Mailman School of Public Health published a study in October, 2014 confirming that rats in NYC are carrying more than 15 dangerous pathogens that can cause serious and sometimes life-threatening illness in humans, such as the Seoul Hantavirus, salmonella, and E. coli. SenesTech has leveraged the SBIR program to address these important public health challenges both domestically and globally.

3140 N. Caden Court
Flagstaff, AZ 86004
senestech.com

For StormCenter Communications, Inc. mapping out and achieving success through the SBIR program seems like a natural fit. In 2010, a Phase I SBIR award provided R&D funding for early stage, high-risk technology development based on emerging map and GIS technologies that allow for big data analysis on interactive maps. As a result of work by Rafael Ameller, CTO at StormCenter who was responsible for the company's SBIR efforts, and the SBIR award, which provided R&D funding for early stage, high-risk technology development, StormCenter was able to develop GeoCollaborate™, a patent-pending tactical collaborative geospatial intelligence solution. The technology is not only focused on incremental advances to the map and GIS technologies in place today; it also revolutionizes how humans interact with maps, data and people at the same time.

STORMCENTER COMMUNICATIONS, INC.

Phases I, II and II-E NASA and Phase III NOAA SBIR funding has allowed StormCenter to continue to add strategic talent to support its growth and innovations long-term - since receiving its SBIR award, the company has doubled its staff. StormCenter is now in Phase III of the SBIR program, which allows federal agencies to contract for work in several areas on a sole-source basis with no further justification or approval required. These areas include collaborative cross-platform virtual globe collaboration; visualization of earth science data using 3-D virtual globes; real-time collaboration using geobrowsers; and innovation, training, and support related to any of these topics. The company sees a broad spectrum of applications for GeoCollaborate™ in fields as diverse as homeland security, weather forecasting, transportation, energy management, and education.

In 2013, NOAA's National Weather Service (NWS) awarded StormCenter a 5-year indefinite delivery indefinite quantity (IDIQ) contract with an initial task order for a proof-of-concept project to allow the NWS Sterling, VA Weather Field Office to collaborate with the Maryland Emergency Management Agency (MEMA) operations center while each used its own common operating picture. In 2014, StormCenter contracted with the United Kingdom's Meteorological Office (in Essex, England) for a similar demonstrator employing the Met Office's Hazard Manager. By making mapping platforms more relevant and usable, not only is the company benefitting from having a competitive edge against larger well-established forms, strong industry players such as Northrop Grumman are partnering with StormCenter for future efforts. The company is also a small business graduate of the University of Maryland Baltimore County (UMBC) incubator program and currently occupies a suite of offices in UMBC's bwtech@UMBC: Research and Technology Park.

1450 South Rolling Rd.
Suite 4.029
Halethorpe, MD 21227
www.stormcenter.com

Being on target applies to Systima Technologies, Inc.'s business and innovations. The company was founded in 2002 with ten employees and received its first SBIR Phase I award 8 months later. Today, the company has 38 full time employees with SBIR continuing to play a crucial role by providing funding and inspiration for cutting edge research and development of advanced technologies for the next generation missile and space launch systems. Through its work with the SBIR program, Systima's product line and credibility has increased, making the company an established industry supplier for technologies including: Stage Separation Systems, Shroud/Fairing deployment systems, Space Payload / KV deployment, Cryogenic Pyro-valves, Insensitive Munitions technologies, and Ionic Salt Based "Green" Monopropellant Fuel Feed and Ignition technologies. The company's sales have grown from $1.6M in 2004 to a total revenue of over $10M in 2014. SBIRs have accounted for 30% of sales over the last 10 years and have produced over $5M in Phase III funds.

SYSTIMA TECHNOLOGIES, INC.

SBIR awards have allowed Systima to confidently maintain a highly skilled engineering staff by indirectly bridging direct contracts in flux during the economic downturn. SBIR funding has enabled Systima to increase the TRL of innovative technologies allowing the company to market these technologies and give its customers the confidence to transition Systima's innovative technologies into high performance missile and space launch systems. Furthermore, the company has forged the expertise to understand and apply requirements for critical infrastructure and capability improvements to better serve its customers. Systima Technologies is an employee-owned small business with innovative and motivated engineers and staff that provide its customers with a fast response from concept development to flight qualified products including end-to-end system testing. SBIR funding is a critical resource that enables Systima to continually develop new products and transition them from concept to production in support of Systima's wide and growing customer base. Systima's customers include the U.S. military (USAF, Army), Boeing Defense Systems, Lockheed Martin, Raytheon Missile Systems, Northrop Grumman, Boeing, Orbital/ATK, and United Launch Alliance. Systima encourages STEM, women, and minority participation in R&D through participation in STEM workshops for the local high schools that encourage and support female interest in science, technology, engineering, and math career fields. The company also creates connections with local universities by teaming on research activities including STTR programs, providing valuable internships and supporting the JCATI (Joint Center for Aerospace Technology Innovation) program promoting aerospace industry growth in Washington State.

10809 120th Ave. NE
Kirkland, WA 98033
www.systima.com

Shooting for the stars isn't just an adage when it comes to Techshot, Inc.'s technology, the company had two technologies fly in space within 9 months of each other, and a third acquired within that timeframe. In addition to their far-reaching technologies, Techshot, Inc. is a notable company for its growth - over the past five years alone, Techshot, Inc. has increased its personnel by 23 percent and its revenue by 33 percent. Today Techshot has 40 team members, most of whom are mechanical, electrical, chemical, or software engineers. Several others are technicians or scientists, representing a broad range of disciplines. The company applies a multidisciplinary approach to every project, which is reflected in the depth and range of their experience while developing innovative and effective solutions.

TECHSHOT, INC.

Techshot, Inc.'s technologies advance the understanding of microgravity and will help get astronauts safely to Mars. The company's seminal work will affect research for years to come onboard the International Space Station (ISS). Techshot, Inc.'s Bone Densitometer is helping NASA to understand microgravity's impact on human structure. Their Life Science Research Sample Transfer Technology allows NASA astronauts to conduct on-orbit analysis in real time and will be actively used aboard the International Space Station when it flies on SpaceX-7 in June 2015. Their Multi-purpose Variable-g Platform recently received a NASA Commercial Readiness Program award, which will lead to it being flown onboard the ISS in the future. The technology will be an enabling device for conducting microgravity research of high-value, medical-grade materials.

Techshot, Inc. began as a student project that was to fly on Challenger's STS-51L mission, and eventually flew on STS-29. Now, Techshot, Inc. provides scholarships for students to attend the local Challenger Center for Space Science Education, and they also provide funding to the national Challenger Center organization. (Challenger Center gives students hand-on exploration and discovery opportunities as they learn about becoming astronauts and engineers.) Techshot, Inc. also continues to offer paid internships every summer for students. Techshot is very active with the universities of Indiana and have subcontracted with both Purdue University and the University of Louisville. Furthermore, Techshot has worked with the Purdue Research Foundation to accelerate the development of emerging technology companies by leveraging Techshot's unique tech capabilities. Overall, Techshot, Inc. is a business that not only supports aerospace, defense, and medical contracts, but promotes STEM activities beyond its contracts.

7200 Highway 150
Greenville, IN 47124
www.techshot.com

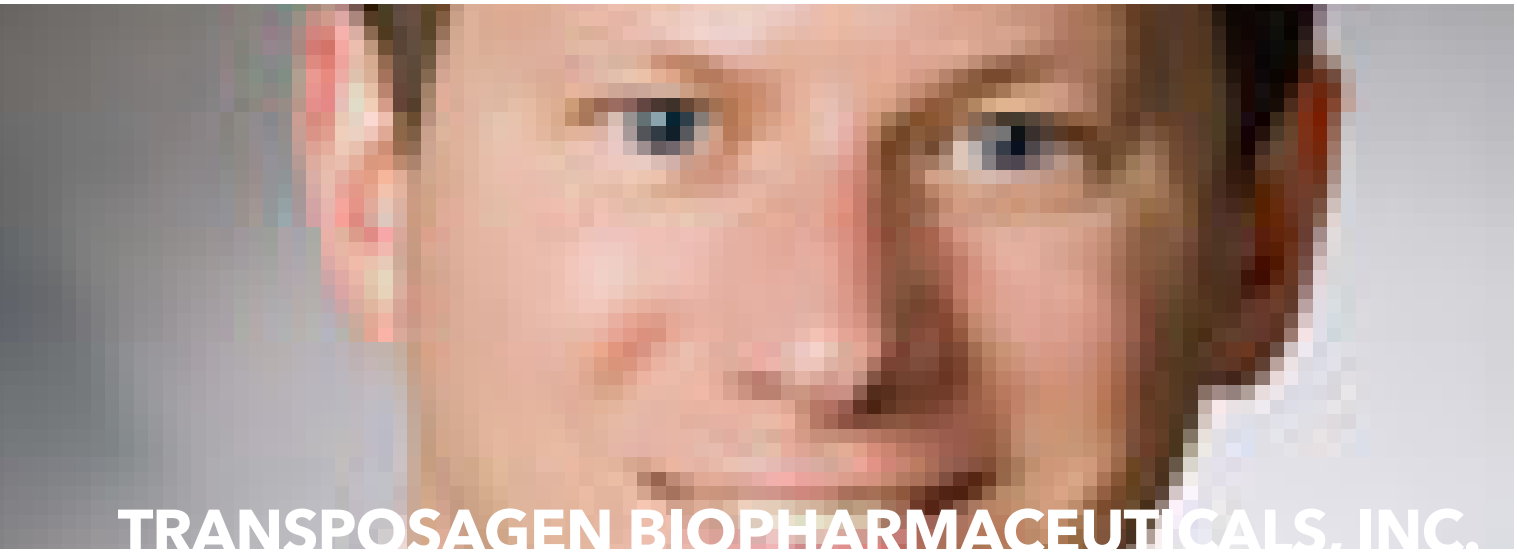
TissueTech received its first SBIR grant in 2003 and at that time the company had fewer than 20 employees and $1.2 million in revenue. Today, the company has received 11 SBIR grants and has more than 180 employees with an estimated annual revenue of $60 million in 2015. In 2013, TissueTech received $2.8 million from angel investors and $10 million from River Cities Capital Funds and Ballast Point Ventures in growth equity financing. To achieve this level of success, TissueTech has been able to commercialize multiple projects through the contributions of SBIR grants. TissueTech products AmnioGuard®, ProKera®, and Cliradex® all received SBIR awards in development and now these ophthalmic products combine in sales for a total yearly revenue of $15 million. This represents 40% of the company's total revenue. To grow the company even further, TissueTech has received recent SBIR awards that will support the company to move from human cells, tissues, and cellular and tissue-based products (HCT/P's) to drug and biologic products. The new wave of products are at the forefront of innovation and will ultimately sustain the company's exponential growth.

TissueTech, Inc. is a privately-held biotechnology company that is the industry leader in regenerative wound healing therapies. Founded in 2001, the company provides its proprietary platform technologies through its commercial entities, BioTissue, Inc. and Amniox Medical, to serve the ophthalmology, optometry, musculoskeletal and wound care markets. TissueTech's core products include amniotic membrane and umbilical cord-based tissue products which are processed utilizing the patented CryoTek™ process. Since inception, over 200,000 human implants have been conducted using the CryoTek™ process and over 300 peer-reviewed scientific publications have been produced supporting the technology platform.

Over the past 2 years alone, TissueTech has been able to connect with numerous domestic and international institutions. Collaborations with institutions such as University of Miami, Walter Reed National Military Medical Center, University of Manchester, University of Texas, University of Cincinnati, University of Columbia, and many doctors' practices have allowed it to conduct research with new products or existing products in new indications. TissueTech also supports regional development by providing jobs and new infrastructure. The company has just completed facility expansion of a state of the art biotechnology manufacturing cleanroom facility in Doral. Company representatives are spread throughout the nation and there are 4 physical facilities in Kendall (FL), Doral (FL), Atlanta (GA) and San Diego (CA). The head office occupies an area of 12,000 square feet for GMP manufacturing, while the administrative offices occupy another 13,000 square feet.

8305 NW 27th St.
Suite 101
Doral, FL 33122
www.biotissue.com

Transposagen Biopharmaceuticals, Inc. is a worldwide leader in genome engineering technologies and services with applications in therapeutics, research & drug discovery, bioproduction, clinical genetic testing and agriculture. Transposagen is cash-positive and has demonstrated double or triple digit revenue growth every year for the past four years. The company has tripled the number of employees since 2010 to twenty-two full time and expect to add another four to eight new full time employees this year, and has had a long and successful record of obtaining federal funding with six projects for a total of over $6 million. The company has also completed a series of private equity funding rounds for over $2 million, and Transposagen and its sister companies have an expected valuation of over $100 million.



TRANSPOSAGEN BIOPHARMACEUTICALS, INC.

Transposagen products and services include the Footprint-FreeTM Gene Editing System, piggyBac™, NextGEN™ CRISPR, XTN™ and RTN™ TALENs, and custom cell lines, stem cells, and animal models. The company has provided off-the-shelf and custom genetically modified rat models to over 50 companies and institutions around the world. In November 2014, Transposagen completed a drug development deal with Johnson & Johnson with the potential for multi-billion dollar revenues. Transposagen, in collaboration with Johnson & Johnson will develop allogeneic Chimeric Antigen Receptor T-cells for cancer therapy.

In early 2015 Transposagen successfully spun out two new companies: Posieda, a therapeutics company and Hera, a toxicology and genetic testing company. The company has also expanded its headquarters and added a state-of-the-art cell culture lab that triples its capacity to generate innovative, custom cell Models, and plans to spin out an agricultural company in late 2015. Transposagen's customers include many of the top pharmaceutical and biotechnology companies in the world, as well as numerous academic laboratories and the National Institutes of Health. Its team of experts understands biomedical research needs and works one-on-one with customers to ensure that they provide the best models and reagents to fit their exact needs.

Transposagen actively promotes interest in STEM in various ways and was highlighted by Second Lady of the U.S., Dr. Jill Biden in February 2012 during her "Community College to Career" tour at Bluegrass Community and Technical College (BCTC) in Lexington, KY, for its involvement with BCTC and by SBA Administrator, Maria Contreras-Sweet. The Administrator singled out Transposagen, to kick-off the 2015 Federal SBIR/STTR Road tour in Louisville KY, for exemplary use of SBIR grants towards exceptional business growth and innovation. Additionally the company is partnering with University of Kentucky in their "Partnering with Research, Industries to Develop (STEM) Educators for College and Career Readiness" program, which develops STEM educators by fostering relationships with scientists and providing hands on experience in research labs.

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Lexington, KY 40508
www.transposagenbio.com

2015 SBIR HALL OF FAME

ARTHUR S. OBERMAYER, PH.D.
JUDITH OBERMAYER, PH.D.

ARTHUR S. OBERMAYER, PH.D. AND JUDITH OBERMAYER, PH.D.

Obermayers. If the name does not immediately come to mind when considering the history of the Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) programs, it should. Arthur and Judith Obermayer have championed the role of small research and development companies in national innovation and economic growth for more than 40 years. Their advocacy predates the codification of the SBIR program, and without their leadership and vision, the program may not exist.

"Describing the NSF Small Business Innovation Program (SBIR), "Potentially the most significant government program of this century in the field of science and technology."

–Arthur S. Obermayer, U.S. Congressional testimony, January 26, 1978.

Arthur and Judith played a major role in establishing the legislative foundation for the SBIR program. As early as 1970, Arthur testified before the U.S. Congress on the challenges small R&D companies faced in dealing with the government and was instrumental in the initial 1974 legislation requiring a small business set-aside at NSF. In 1978, he provided the first testimony specifically supporting the SBIR program before any Congressional committee. He described the NSF SBIR Program as, "potentially be[ing] the most significant government program of this century in the field of science and technology… This program hopefully will be the model for small business innovative programs through the entire government." The program would become a model, thanks in part to the work of Judith Obermayer.

Judith was also engaged in the necessary political and policy processes necessary to establish the SBIR program across the Federal Government. In 1979, Judith Obermayer was asked by Milton Stewart, former Chief Council for Advocacy, to serve on a Small Business & Innovation task force. This distinguished group of twenty science-based business executives was tasked with how to strengthen innovative small businesses. Judith, Arthur, and the other members' work led to a legislative proposal calling for every agency with a budget in excess of $100 million to establish a program modeled after the NSF SBIR Program. The Obermayers convinced most of the delegates at the 1980 White House Conference on Small Business to support SBIR. After overcoming the resistance of the academic community, the establishment of a government-wide SBIR program became law in 1982.

Arthur Obermayer founded and is President of Moleculon Research Corporation, formerly a chemical, polymer and pharmaceutical research and development company. Judith Obermayer was a consultant to small high technology companies, and is an officer of Moleculon Research Corporation. In 1984, they formed a spin-off, Moleculon Biotech, Inc., which took over the operations of Moleculon Research Corporation, went public, and was later acquired by an Australian pharmaceutical company. The Obermayers are currently active in angel investing and are principals in Obermayer Foundation, Inc., which supports nonprofit activities of its own and those of many early-stage organizations.

SBIR AND STTR PROGRAMS

THE SBIR PROGRAM

The Small Business Innovation Research (SBIR) program is a highly competitive program that encourages domestic small businesses to engage in Federal Research/Research and Development (R/R&D) that has the potential for commercialization. Through a competitive awards-based program, SBIR enables small businesses to explore their technological potential and provides the incentive to profit from its commercialization. By including qualified small businesses in the nation's R&D arena, high-tech innovation is stimulated and the United States gains entrepreneurial spirit as it meets its specific research and development needs.

THE STTR PROGRAM

Small Business Technology Transfer (STTR) is another program that expands funding opportunities in the federal innovation research and development (R&D) arena. Central to the program is expansion of the public/private sector partnership to include the joint venture opportunities for small businesses and nonprofit research institutions. The unique feature of the STTR program is the requirement for the small business to formally collaborate with a research institution in Phase I and Phase II. STTR's most important role is to bridge the gap between performance of basic science and commercialization of resulting innovations. Federal agencies with extramural research and development (R&D) budgets that exceed $1 billion are required to reserve 0.4% (FY15) of the extramural budget for STTR awards to small businesses.

SBIR PARTICIPATING AGENCIES

Each year, Federal agencies with extramural research and development (R&D) budgets that exceed $100 million are required to allocate a percentage 2.9 percent (FY15) of their R&D budget to these programs. Currently, eleven Federal agencies participate in the program:

Department of Agriculture

Department of Commerce
National Institute of Standards and Technology

Department of Commerce
National Oceanic and Atmospheric Administration

Department of Defense

Department of Education

Department of Energy

Department of Health and Human Services

Department of Homeland Security

Department of Transportation

Environmental Protection Agency

National Aeronautics and Space Administration

National Science Foundation

Each agency administers its own individual program within guidelines established by Congress. These agencies designate R&D topics in their solicitations and accept proposals from small businesses. Awards are made on a competitive basis after proposal evaluation.

U.S. Small Business Administration
www.sba.gov
For more information on the SBIR/STTR programs go to www.SBIR.gov