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National Institutes of Health
Commercialization Assistance Program (NIH-CAP)

<p>Knoxville, Tennessee www.490biotech.com</p>	<p>490 BioTech Inc. Diagnostics</p>
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Technology Name: Autobioluminescent cell reporter technology

Technology Description: The innovation in 490 BioTechs technology is the ability to perform high-throughput bioluminescent-based screening assays without requisite addition of a chemical substrate previously required to activate the light signaling response. Bypassing the need to add this chemical substrate reduces the steps required to perform each assay as well as the expense related to the purchase of the substrate. This equates to an assay platform that is faster to complete, easier to perform, less error-prone, and less expensive to implement, in parallel with more data being obtained per assay.

Company Description: 490 BioTech develops continuously light-emitting (bioluminescent) human cell lines genetically programmed to report on biological events or interactions that affect their metabolic status. The application of this technology to in vitro cell culture and in vivo small animal preclinical efficacy/toxicity testing and imaging regimens is designed to accelerate the pace of new drug discovery and move drugs more rapidly and more effectively toward Phase I human testing with a reduced overall cost.

<p>Raleigh, North Carolina www.adamasnano.com</p>	<p>Adamas Nanotechnologies Carbon</p>
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Technology Name: nanodiamond based fluorescent labels

Technology Description: Fluorescent color centers in nanodiamond particles for bioimaging applications are created by irradiation with high energy particles. The emission in the far red/near infrared is persistent and non-blinking under long term excitation. Conditions for the production of 10-20nm NDs containing nitrogen-vacancy centers with the highest possible brightness will be explored and optimized. The surfaces of the nanodiamond particles will be functionalized to enable the ready attachment of selective linking agents for cell labeling and targeting. Stable photoemission from the particles will enable long term tracking of their location in cells and tissue.

Company Description: Admas is dedicated to the development and production of nanodiamond particles as well as their related applications to serve diverse markets. Nanodiamond is a platform material for a variety of life science and industrial applications such as polymer nanocomposites to improve polymer properties and nanolubricants which significantly improve fuel efficiency. One core technology intended for the life science community is the manufacturing of non-toxic bright fluorescent nanodiamonds with magnetic sensing capabilities. Admas performs modification of nanodiamonds providing fluorescent properties for diagnostics and drug development, and produces nanodiamonds with a range of sizes, controlled surface chemistry, and conjugates with biomolecules.



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Winthrop, Maine www.albatech.com	<h2>Alba-Technic, LLC</h2> <p>Medical Devices</p>
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Technology Name: Advanced Materials

Technology Description: The impact resisting system used in SMARTY relies on the patented combination of a honeycomb and dilatant material (A-T Patent 8,087,101 in US and Europe). In the case of a fall, the impact causes the dilatant material to immediately change to form a hard shell that spreads and shunts the forces over the honeycomb matrix. The advanced manufacturing process currently being developed for SMARTY begins with a state-of-the-art image capture process to provide a customized fit. Details from the image capture and standard head shape geometries will be used to produce 3D printed molds from which the headgear will be produced.

Company Description: Alba-Technic, LLC has developed SMARTY - advanced protection for fall mitigation. It utilizes a patented, highly efficient dilatant/honeycomb impact resistance material system (EVO2) to reduce traumatic brain injury for older adults and for persons prone to falls. The protective headgear is designed for aesthetic appeal and comfort by using advanced materials and customized manufacturing techniques. Alba-Technic's target markets are Retirement Communities for adults that want to remain active but have a fear of falling, nursing homes and rehabilitation centers, initially selling direct and then through distributors and GSA schedules.

Cambridge, Massachusetts www.aldatubio.com	<h2>Aldatu Biosciences, Inc.</h2> <p>Diagnostics</p>
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Technology Name: Tech: Pan-Degenerate Amplification and Adaptation (PANDAA); HIV Drug Resistance Testing/Diagnostic Development

Technology Description: Aldatu's PANDAA platform technology overcomes genotyping challenges associated with HIV biology and enables qPCR for drug resistance testing for the first time, facilitating development of affordable and sensitive diagnostic tools to meet this growing unmet clinical need

Company Description: Aldatu Biosciences is a Boston-based, seed-funded biotechnology company developing innovative diagnostic tools based on its proprietary genotyping platform, PANDAA. Aldatu is committed to commercializing products that address diagnostic challenges in global health, primarily in HIV and other infectious diseases, and that improve both the quality of patient care and healthcare cost-efficiency.



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<p>Houston, Texas www.am-biotech.com</p>	<p>AM Biotechnologies, LLC Research Tools</p>
<p>Technology Name: X-Aptamer Selection Kit</p> <p>Technology Description: The most innovative feature of the X-Aptamer Selection Kit is the user-friendly bead-based process to select synthetic affinity reagents. The selection process centers on a library of billions of microbeads. This library accommodates virtually any chemical modification of DNA or RNA as well as multiple different modifications in the same library. This chemical diversity is not possible with other aptamer selection processes and results in X-Aptamers performing better than conventional aptamers. Commercial applications span life science research support, diagnostics and therapeutics. X-Aptamers can be used as substitutes for monoclonal antibodies, which are widely used in many life science applications.</p> <p>Company Description: AM Biotechnologies enables scientists to easily develop advanced synthetic affinity reagents called X-Aptamers. For too long, aptamer development has been sequestered in the hands of a few companies and specialized scientists. Aptamers have also suffered from a lack of chemical diversity, limiting their performance. X-Aptamer technology removes the limitations on the chemical entities that can be used in an aptamer selection resulting in significantly better performance and also enables the X-Aptamer Selection Kit. AM Biotech is transforming aptamer development from art to science and with the kit is widely distributing X-Aptamer development throughout the entire life science market.</p>	

<p>Seattle, Washington www.arcadiabio.com/</p>	<p>Arcadia Biosciences Biobased Products/ Biomaterials/ Biotech</p>
<p>Technology Name: Reduced gluten cereal grains</p> <p>Technology Description: Arcadias NIH STTR award has enabled us to research the genetics of a reduced gluten (RG) barley mutant with drastically altered seed storage proteins. Using a target-selected mutagenesis approach, we are identifying wheat lines with similar reductions in gluten. Simultaneously, our academic partner is testing the ability of a reduced gluten (RG) barley diet to alleviate digestive symptoms in gluten-intolerant rhesus macaques, a non-human primate model of celiac disease. Our non-GMO (genetically modified organism) RG wheat will be appropriate for any consumer of grain products.</p> <p>Company Description: Arcadia Biosciences develops agricultural products that create added value for farmers while benefiting the environment and enhancing human health.</p>	



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Boston, Massachusetts www.arietiscorp.com	<h2>Arietis Pharma</h2> <p>Pharmaceuticals</p>
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Technology Name: Antibiotics for Recalcitrant Infection

Technology Description: We reasoned that activation of a target, rather than inhibition, could lead to the demise of drug tolerant cells and eradication of bacterial pathogens. The acyldpeptide (ADEP), first described by Eli Lilly in the 1980s, activate the ClpP protease, relieving it from regulatory control and the requirement to use ATP. Combining ADEPs with traditional antibiotics produces complete sterilization of bacteria gram positive pathogen cultures. With this approach, it may be possible to cure chronic and recalcitrant infections, such as endocarditis and biofilms on implanted medical devices, for the first time.

Company Description: Arietis Pharma is a Boston-based biotechnology company focused on the discovery and development of novel antimicrobial agents.

Boston, Massachusetts cartahealth.com	<h2>Artaic Health, LLC (Insightfil)</h2> <p>Healthcare IT (software, simulation-based solutions, educations and training)</p>
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Technology Name: Medication Adherence

Technology Description: We link the providers electronic medical records system (EMR) to our central fill pharmacy partners' prescription management system (PMS) to our proprietary patient portal/app. Then, through proprietary interconnected/ integrated software applications, automated pill dispensing robotic workstations, and personalized on-demand packaging we deliver the first-ever comprehensive medication delivery, education, and adherence platform solution.

Company Description: 50% of prescriptions are never taken by patients. This non-adherence is attributed to 40% of treatment failures, 700,000 hospitalizations, one death every 19 mins, and \$300B impact to US healthcare. Funded by NIH, our comprehensive medication delivery, education, and adherence solution uses proprietary inter-connected software, pill dispensing robotic workstations, personalized on-demand packaging, and a patient app to link the providers EMR to the pharmacy prescription management system to the patient to close the care circle...leading to better health outcomes, higher patient satisfaction, and lower costs.



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<p>Mountain View, California www.astraeatherapeutics.com</p>	<p>Astraea Therapeutics Pharmaceuticals</p>
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Technology Name: Pharmaceutical Drug Development

Technology Description: Astraeas technology is a Novel Drug candidate for smoking cessation pharmacotherapy. Its key differentiator and innovation is (i) its novel pharmacological target, the alpha3beta4 nicotinic receptor, and (ii) its distinct pharmacological profile, which distinguishes it from available smoking cessation therapy, (varenicline and bupropion), both of which have very low success rates for longterm abstinence and are plagued with adverse effects and black box warnings. Astraeas lead candidate shows remarkable efficacy in an animal model of relapse, in which varenicline, tested side-by-side, showed no beneficial effect. Astraeas lead candidate may offer a comprehensive approach to aid quitting and maintain long-term abstinence.

Company Description: Founded in 2009, Astraea Therapeutics is a privately-held biopharmaceutical company, with a development pipeline of advanced small-molecule drug candidates for specialized, niche applications in treatment of substance abuse (alcohol, cocaine), smoking cessation, sickle cell pain, chronic pain and Parkinsons disease; areas underrepresented in the pharma industry pipelines. Astraeas portfolio reflects our efficient drug discovery process, in combination with cutting-edge target validation to enable pioneering approaches and drug candidates for treatment of difficult-to-treat health disorders. Astraeas technology is centered around two major molecular targets implicated in CNS diseases and neurodegeneration, for which Astraea has deep, long-standing expertise and mature development programs.

<p>Ann Arbor, Michigan backyardbrains.com</p>	<p>Backyard Brains STEAM-Based Solutions (Science, Technology, Engineering, Art, & Mathematics)</p>
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Technology Name: Neuroscience and Biology Education

Technology Description: Our technology takes complex ideas and equipment and makes it easy enough that neuroscience experiments can be done in the 5th grade classroom. Our Phase II SBIR was to develop a few of these technologies and bring them to market: the SpikerBox, the RoboRoach and the OptoStimmer. Each of these products touches on fundamental aspects of neuroscience that are not covered by any other tool on the market.

Company Description: The brain is complex, but extremely fascinating. To study the brain, you typically have to be a graduate student at a major university. Not any more! Backyard Brains enables everyone to be a neuroscientist! We provide affordable neuroscience experiment kits for STEAM students of all ages to learn (hands-on) about electrophysiology. Now everyone from schoolchildren to grad students and every grade in between can experiment with similar tools used by real neuroscientists worldwide! By following a few simple steps, everyone can experience first-hand how the brain communicates with our senses, memories, hopes, and desires.



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<p>Winston Salem, North Carolina</p>	<p>Biographics Inc. Research Tools</p>
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Technology Name: Multifunction recording and real time control

Technology Description: The software system will allow study of tethered behaving experimental animals over long duration with electrical recording and stimulation with electrical, chemical and optical sensors and stimulation. The advanced real time software and electronics can be applied to many fields.

Company Description: Biographics Inc. develops real time multiprocessor systems for multifunction data acquisition and control systems for neurosciences and fields with related applications.

<p>State University, Arkansas www.biostrategies-lc.com</p>	<p>BioStrategies LC Biotechnology for Healthcare</p>
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Technology Name: Enzyme replacement therapeutics for rare diseases

Technology Description: We are developing (in this SBIR Phase II) an enzyme replacement drug for Sanfilippo Syndrome which has no current effective drug options available. Our technology is unique in that it utilizes a cost effective plant based drug production platform combined with a proprietary fusion protein delivery system designed to be effective in treating currently hard to treat organs of the body including the CNS.

Company Description: BioStrategies LC is a discovery R&D biotechnology company developing enzyme replacement therapies (ERT) for rare human genetic diseases. Our technology is unique in that it employs a rapid plant based protein expression system and a proprietary fusion protein delivery system to efficiently target these drugs to diseased cells of the body including hard to treat organs such as bone and brain. We currently employ 11 research personnel including 3 PhD level research leaders and 2 PhD cofounders who act as the managing and scientific directors. We have four drug products in development all funded by SBIR grants from NIH.



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<p>Framingham, Massachusetts www.bridge12.com</p>	<p>Bridge12, Technologies, Inc. Research Tools</p>
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Technology Name: Instrumentation for Magnetic Resonance Spectroscopy (NMR, EPR, DNP)

Technology Description: The innovation inherent to this application is the integration of the THz source directly into the NMR system. This is possible since the superconducting magnet, required for the NMR experiment is not completely occupied by the equipment used for NMR spectroscopy. It is therefore possible to integrate the THz source, required for DNP, into the NMR magnet, effectively eliminating the otherwise required second, stand-alone superconducting magnet for the THz source.

Company Description: Bridge12 Technologies is a privately-held small business focusing on the development of THz instrumentation for use in scientific research such as magnetic resonance spectroscopy, communication systems and industrial applications. The company has a world-wide customer based and conducts research and development on applications of microwave and THz radiation in novel research fields. The company has launched several innovative products based on SBIR grants from different federal agencies.

<p>Doylestown, Pennsylvania www.c4imaging.com</p>	<p>C4 Imaging Medical Devices</p>
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Technology Name: Medical Imaging

Technology Description: Our technology will provide meaningful clinical data that will enable physicians to enhance the treatment offered to men who receive prostate brachytherapy, as well as provide better guidance to physicians planning treatment for a range of other patients. Current markers are usually metallic implants that rely on MRI signal voids for localization. Although useful as simple fiducial markers, these markers cannot be used to precisely locate specific areas in relation to the surrounding anatomy. Our technology will allow clinicians to incorporate MRIs optimal imaging in treatment assesment and ensure that the planned radiation dose has been adequately delivered.

Company Description: C4 Imaging is a technology company focused on developing innovative medical devices that enable clinicians to more accurately perform image-guided procedures. The Companys IP portfolio is centered on its proprietary positive-signal MRI contrast agent (C4) and associated encapsulation technology. The Company develops and launches products that address key clinical needs in significant patient populations. Depending on the particular target market niche, the Company either develops and launches the product independently or strategically partners with existing market leaders.



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<p>Gainesville, Florida www.captozyme.com</p>	<h2>Captozyme</h2> <p>Pharmaceuticals</p>
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Technology Name: Oxalate Degrading Enzymes for Treating Hyperoxaluria (Kidney Stones)

Technology Description: Kidney stones are a common and painful problem. In the US, approximately 75% of all stones are composed of calcium oxalate, and one-third of these cases are recurrent stone formers with elevated urinary oxalate levels (hyperoxaluria). Roughly 4 million Americans have either enteric or absorptive hyperoxaluria and are capable of responding to dietary restrictions. Currently there is no effective treatment strategy for calcium oxalate stone formers. Therefore, the developed technology is an oxalate-degrading enzyme that can effectively act as a dietary intercept, acting within the stomach, and hence reduce the occurrence of stone development by limiting oxalate absorption.

Company Description: Captozyme is a privately owned biotechnology company with a strong product pipeline addressing unmet medical needs in the fast growing markets of foods for special dietary uses, and orphan drug therapeutics. The company is dedicated to the prevention and treatment of debilitating oxalate-related conditions such as primary and secondary hyperoxaluria, which constitutes approximately 8 million Americans.

<p>Pittsburgh, Pennsylvania www.carmellrx.com</p>	<h2>Carmell Therapeutics</h2> <p>Medical Devices</p>
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Technology Name: Blood plasma-based biomaterial (PBM) putty for bone fracture repair applications

Technology Description: The key technological innovation developed is the ability to bind together (i.e., plasticize) plasma and platelet-based proteins and growth factors without destroying their ability to function. Biologically-active materials manufactured from human blood plasma can be produced in any physical form by molding, extruding, and machining processes. Their degradation time can be tailored for a particular application by controlling cross-linking during manufacture (e.g., 2 weeks for tendon or 2 months for bone repair). Initial applications are focused on treating musculoskeletal injuries, but additional applications exist in advanced wound care, cardiology, and applications where acceleration of healing and infection reduction is needed.

Company Description: Carmell is a spin out of Carnegie Mellon University that is developing an exciting new concept in biologics: biologically-active materials manufactured from human blood plasma. These plasma-based materials contain a concentration of natural regenerative factors that promote healing, reduce complications, and save healthcare costs. The first product is a putty to treat bone fractures, reducing infections while accelerating healing of not only the fracture but also surrounding soft tissues. Unlike competing approaches, these products are safe, consistent and inexpensive to produce truly unique for the industry.



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<p>San Diego, California www.cellidx.com</p>	<p>Cell IDx, Inc. Diagnostics</p>
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Technology Name: Multiplex Immunofluorescence Assay

Technology Description: Cell IDx has produced a higher content, quantitative multiplex immunofluorescence (mxIF) assay that will significantly improve breast cancer patient outcome by providing, in combination with gene sequencing data, the knowledge needed to better direct each patients therapy. Cell IDxs UltraPlex mxIF assay will be incorporated into a closed, completely automated system wherein a tumor sample will be processed, imaged, analyzed and results emailed to the oncologist and pathologist for their final interpretation. Our mxIF technology is a platform technology that has been demonstrated to be applicable to multiple cancer indications.

Company Description: Cell IDx was founded to advance molecular profiling of diagnostic biopsies, to complement the data from genomic sequencing, to yield significantly more information for pathologists and oncologists to make informed diagnoses and selection of therapy. Disruptive technologies being pioneered at Cell IDx are poised to replace traditional immunohistochemistry (IHC) assays with more robust, simpler and faster methods that offer unbiased, fully quantitative results in an automated format.

<p>Needham, Massachusetts www.center4si.com</p>	<p>Center for Social Innovation Healthcare IT (software, simulation-based solutions, educations and training)</p>
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Technology Name: CTT Track: t3 (think. teach. transform.)

Technology Description: Motivational Interviewing (MI) is an evidence-based practice (EBP) widely used in health and human services. This person-centered, guiding approach to counseling seeks to enhance client motivation and support positive behavior change. First described by psychologist William Miller in the early 1980s, MI focused on problem drinkers. Now it is also used in mental health, primary care, homeless services, HIV care, smoking cessation, and corrections. MI has a robust evidence base, which has been translated into practice and disseminated using various training approaches. However, rarely has simulation gaming technology been brought to bear, particularly for human service providers.

Company Description: The Center for Social Innovation (C4) promotes best practices that improve the lives of marginalized and vulnerable people. We focus on complex public health problems such as homelessness, trauma, mental illness, and addiction. Using state-of-the-art research, training, and technology, we help individuals, agencies, and communities deepen the impact of their work.



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Saint Louis, Missouri www.cofactorgenomics.com	<h2>Cofactor Genomics</h2> <p>Pharmaceuticals</p>
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Technology Name: RNA Diagnostics

Technology Description: Cofactor Genomics has developed a sensitive, non-invasive approach to isolate and enrich for low abundant circular RNA molecules that may aid to diagnose disorders like Parkinsons Disease (PD) prior to full disease onset. We have developed a robust molecular strategy to deplete biosamples of linear RNA and subsequently amplify circular RNA molecules. Our technology will allow us to provide diagnostic services in our CAP/CLIA laboratory to pharma clients.

Company Description: Cofactor Genomics was founded by scientists that worked on the Human Genome Project. Having spent the past 10 years building technologies to understand RNAs role in diseases and human health, the company has developed a platform that will enable early detection and diagnosis of disease. Detecting a disease earlier can provide insight into the best treatment options and add years of better quality life to a patient.

Columbia, South Carolina www.chi-llc.net	<h2>Connecting Health Innovations LLC</h2> <p>Healthcare IT (software, simulation-based solutions, educations and training)</p>
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Technology Name: Dietary Inflammatory Index for Clinical Applications

Technology Description: CHI will focus on delivering three main types of products and services. First, CHI will develop an application (App) based on the research-tested, evidence-based DII for use in screening patients DII Screener. Physicians will initially screen their patients who show preliminary signs of an inflammation-related condition using the DII Screener. Second, patients consuming a pro-inflammatory diet will be referred by their physicians to our patient-centered counseling intervention. Third, patients employ the self-monitoring system to better manage their diet. The DII patent held jointly by the University of South Carolina and Dr. James R. Hbert, positions us well for commercialization.

Company Description: Connecting Health Innovations LLC (CHI) is commercializing products and services that help medical professionals screen for and manage patients at risk of diseases caused by chronic inflammation. This SBIR project is intended to modify the research-tested, evidence-based Dietary Inflammatory Index for use as a highly effective clinical tool to assist patients in reducing the pro-inflammatory effects of their diets.



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<p>Charlotte, North Carolina www.countervailcorp.com</p>	<p>Countervail Corporation Pharmaceuticals</p>
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Technology Name: Galantamine as an antidote for organophosphorus poisoning

Technology Description: Countervails drug, associated with the current SBIR Phase II funding, significantly improves survival when administered prior to an exposure to a lethal amount of soman nerve agent when used in conjunction with standard care drugs. Studies have shown the drug is broadly efficacious to all organophosphorus (OP) toxins and therefore is applicable to protect against nerve agent and OP pesticide lethal exposures. The commercial application for this indication is targeted toward first responders and military personnel that can orally take the drug to provide protection from potential exposure to nerve agents.

Company Description: Countervail develops medical countermeasures against the toxic effects of organophosphorus compounds. Examples of these toxins are nerve agents such as sarin and organophosphate pesticides such as chlorpyrifos.

<p>Eden Prairie, MN, Minnesota</p>	<p>CT Resources, Inc. Medical Devices</p>
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Technology Name: Implantable device for treating acid reflux

Technology Description: PC partially surrounds the LES emulating the fundus of the stomach partially wrapping around the LES in a partial fundoplication surgery. The shaped PC has an immediate constraining effect that will be further improved after the device is ingrown into the wall of esophagus, fortifying that segment of the wall and constrains it from stretching. This makes the LES wall less compliant, resisting unwanted forced opening to mitigate acid reflux. The open side of the PC allows the uncovered esophageal wall to relax and open naturally permitting swallowing and belching easier, thus mitigating adverse events common to other treatments.

Company Description: CT Resources is developing a simple implantable device for the treatment of acid reflux (GERD) disease. The device intends to mimic a partial fundoplication surgical procedure but at a fraction of the time and surgical difficulty. We have the basic device design, and are going through animal studies to compile both safety and efficacy data. In the second year of this phase 2 program, and upon completion of the 1 year GLP animal study, we intend to approach the FDA, along with our biocompatibility data, to request permission to commence a human clinical study.



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Wenham, Massachusetts www.elucidbio.com	<h2 style="margin: 0;">Elucid Bioimaging Inc.</h2> <p style="margin: 0;">Diagnostics</p>
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Technology Name: Quantitative radiology

Technology Description: CAP applies hierarchical inference incorporating computerized image analysis and data fusion algorithms to patient clinical chemistry and blood biomarker data to provide a multi-factorial panel that may be used to distinguish between different subtypes of disease. Elucids CAP platform presents a consistent analytic approach that increases the utility of the existing installed base of medical imaging equipment. Elucid creates value and grows revenue by selling cloud-based per-use fees and software licenses for institutions that desire on-prem server capability, with sustainable market leverage to provide a competitive edge in the marketplace based on our patented disruptive technology.

Company Description: Elucid Bioimaging Inc. (Elucid) advances quantitative imaging and integrative medical science for the benefit of patients. We develop sophisticated products and services to better inform medical decisions, personalize therapy, and provide effective markers for drug development. We facilitate the shift of in-vivo imaging from subjective/qualitative interpretation to quantitative analytical measurement.

San Ramon, California	<h2 style="margin: 0;">Elysium Therapeutics, Inc.</h2> <p style="margin: 0;">Pharmaceuticals</p>
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Technology Name: Oral Opioid Overdose Protection

Technology Description: Elysium is developing a unique class of proprietary molecules designed to provide effective opioid-based pain relief, with unprecedented protection from all routes of abuse. While one portion of the molecule is designed to deliver known prescription opioids, the other portion of the molecule acts as a governor to prevent the delivery of an overdose if multiple pills are ingested.

Company Description: Elysium is a Delaware corporation whose mission is to develop game-changing technologies that will (i) enhance the ability of pain patients and their physicians to employ effective opioid-based pain management, (ii) reduce the costly impact of prescription drug abuse on families and our economy; and (iii) save lives.



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<p>Durham, North Carolina www.playmatics.com</p>	<h2 style="margin: 0;">Entertainment Science</h2> <p style="margin: 0;">Healthcare IT (software, simulation-based solutions, educations and training)</p>
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Technology Name: Breathe Free, a Mobile Game for Smoking Cessation

Technology Description: "Breathe Free" will be a smartphone-based software program to help smokers quit smoking by rewarding them for abstaining from smoking with mobile game-based virtual rewards and social reinforcement. Commercial applications include direct to consumer, licensing to wellness programs, and as a medical treatment prescribed by health care providers. Its major innovation is its transformation of a highly effective, empirically supported cessation approach (CM) from an expensive, relatively brief, clinic-based experience to a smartphone-based, long-lasting, fun, mobile social game app that replaces cash incentives with virtual rewards that have monetary value to participants but are free to the provider to create.

Company Description: The applicant is a Joint Venture between Entertainment Science, Inc., and Playmatics, LLC. The joint venture was established expressly to develop "Breathe Free" under the subject SBIR. Entertainment Science originates and leads R&D efforts to create Games for Health (digital games that influence health related behavior). To date, its principal source of support has been grants from the NIH. Playmatics is a world-class developer of multi-platform digital games, spanning the gamut from major Hollywood entertainment properties (Breaking Bad, Walking Dead) to government sponsored "Serious Games". CCO Nick Fortungno's casual game "Diner Dash" has been downloaded over a billion times.

<p>Seattle, Washington www.willow.technology</p>	<h2 style="margin: 0;">Evidence Based Practice Institute, LLC</h2> <p style="margin: 0;">Healthcare IT (software, simulation-based solutions, educations and training)</p>
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Technology Name: WILLOW

Technology Description: For organizations that provide behavioral healthcare who want to provide, measure, and report patient outcomes that seamlessly integrates into their existing workflow and electronic medical records, WILLOW is a service delivery system that guides clinicians in the delivery of customized evidence-based behavioral health treatments. Unlike other traditional approaches, WILLOW delivers real-time, exactly as needed training, decision support, and therapies that both support clinicians and empower consumers.

Company Description: Evidence Based Practice Institute (EBPI) creates products and services to improve mental health. EBPI brings decades of experience and deep expertise in two areas: training and implementing evidence-based mental health interventions and agile, user-centered design of software tools. EBPI is led by long-time collaborators, Drs. Kelly Koerner and Linda Dimeff. Koerner and Dimeff began as research collaborators in 1996 at the University of Washington's prestigious Clinical Psychology graduate school program, and then worked together for 8 years on several executive teams.



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<p>ucker, Georgia www.expressiontherapeutics.com</p>	<h2>Expression Therapeutics, LLC</h2> <p>Biotechnology for Healthcare</p>
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Technology Name: High Expression Recombinant fVIII

Technology Description: ET has developed a novel rfVIII product that overcomes the primary limitation in the manufacture of currently available hemophilia A pharmaceuticals. Through targeted bioengineering of fVIII, ET has developed a lead candidate, termed ET3i, overcomes these low levels of expression. Using pharmaceutical manufacturing systems similar to those currently used to manufacture fVIII, we are able to produce 50-100 fold greater levels of fVIII. This offers several advantages such as purification without the use of a monoclonal antibody, increasing the safety profile, and substantially lowering the cost of manufacturing, increasing the availability and distribution for treatment hemophilia A.

Company Description: ET, LLC is a privately-owned biotechnology company whose mission is to develop improved therapeutics for the treatment of hemophilia A. ET was founded in 2005 by Emory University faculty members Christopher B. Doering, H. Trent Spencer, and John S. (Pete) Lollar, who combined have extensive experience in hemophilia care, fVIII biology, gene expression, protein engineering and the development of both rfVIII and gene therapy-based bio-therapeutics. ETs patented (PCT/US02/33403) high expression fVIII transgene technology (designated ET3) is based on the identification of critical residues in fVIII that improve expression 10100-fold both in recombinant protein expression systems and gene therapy applications.

<p>Mobile, Alabama www.exsciencorp.com/</p>	<h2>Exscien Corporation</h2> <p>Biotechnology for Healthcare</p>
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Technology Name: Mitochondrial DNA Repair Mechanisms

Technology Description: Exsciens three-part fusion protein attenuates cell fate after reactive-oxygen-species induced injury (e.g., stroke, heart attack, tumors, etc). The functional components of the fusion protein enable cell entry (part 1), target the mitochondria (part 2) and then repair oxidative damage to the mtDNA (part 3), restoring normal cellular operation. Essentially, Exscien introduces and over expresses naturally occurring DNA repair enzymes at the point of oxidative damage, enabling the cell to cope with the injury being inflicted. It does not prevent an ischemic event like a heart attack from happening, but it will halt and repair the underlying organ damage being inflicted.

Company Description: Exscien is a biotechnology company, in preclinical testing of its platform technology. The full development of Exsciens lead drugs will yield first-in-class therapies that repair the underlying organ damage stemming from acute and chronic conditions such as stroke, heart disease, diabetes, cancer, etc. By re-establishing normal structure and metabolic function at the cellular level within an organ, the health of the organ is restored. For example, we do not stop a stroke from happening but we can limit the damage done, thereby improving the quality of life for millions that would otherwise suffer the full consequences of their condition.



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Saint Paul, Minnesota www.focusstart.com	<h2>FocusStart LLC</h2> <p>Medical Devices</p>
<p>Technology Name: Anti-coagulum Cardiac Ablation Catheter</p> <p>Technology Description: There is a need to reduce thromboembolic events during cardiac radio frequency (RF) ablation procedures. Coagulum formation on RF catheter electrode tips is a possible source of such events. FocusStart's innovative device applies a small negative charge to catheter electrodes. Previous testing has shown that the device reduces coagulum formation during RF ablation. The present studies aim to not only further validate these findings by correlating reduction of coagulum formation with a reduction of thromboembolic events in acute and chronic animal models, but also to further develop and validate the negative charge device for regulatory approval and commercialization.</p> <p>Company Description: FocusStart is seeking to reinvent the early stage development process and business model. The model focuses on 3 key processes: evaluation, capital-efficient accelerated development and early exit. Capital-efficient and accelerated development is possible by leveraging existing infrastructures, processes, quality systems, networks and resources of Devicix and other key partners (versus having to recreate those). Lastly, the ultimate goal after development is to seek an exit of the developed product. This is accomplished via strategic sale, licensing or formal spinout as operating company. FocusStart is developing four innovative technologies which includes the Anti-coagulum Cardiac Ablation Catheter Technology.</p>	

Williamsville, New York for-robin.com/	<h2>For-Robin, Inc</h2> <p>Biotechnology for Healthcare</p>
<p>Technology Name: Biotechnology/Cancer Therapeutics</p> <p>Technology Description: Our unique, patented, mouse monoclonal antibody, mJAA-F11, and humanized variants specifically bind and block the Thomsen-Friedenreich glycoantigen (TF-Ag), a disaccharide tumor marker found on 80 % of carcinomas but not accessible on normal tissues. mJAA-F11 is highly selective for the TF-Ag alpha which is expressed on breast, colon, lung and prostate carcinomas. Relevant to the breast cancer, mJAA-F11 targets 80% of breast cancer types regardless of the Estrogen, Progesterone and Her/2 status. The successful translation of mJAA-F11 based therapies to the clinic first requires humanized JAA-F11 for use as an antibody-drug conjugate (ADC) or for direct immunotherapy to minimize toxicity.</p> <p>Company Description: For-Robin, Inc. (F-R), is an antibody immunotherapy company, founded in 2012 by Dr. Kate Rittenhouse-Olson in honor of her sister, Robin who died at age 31 of breast cancer. For-Robins primary mission is treating breast cancer patients. Our proprietary technology, the monoclonal antibody JAA-F11 and humanized variants, target all breast cancer subtypes including triple negative breast cancer which currently has no targeted therapy. In addition, this technology should be applicable to colon, prostate, lung and bladder carcinoma. For-Robin plans to bring its core humanized JAA-F11 technology as an adjunct therapy to patient populations as quickly, safely and efficaciously as possible.</p>	



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Louisville, Kentucky www.gen9.com	<h2>Gen Nine, Inc.</h2> <p>Healthcare IT (software, simulation-based solutions, educations and training)</p>
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Technology Name: Head-mounted Activity Monitoring System

Technology Description: The Head-mounted Activity Monitoring (HAM) System is a highly compact and lightweight headset, and it is integrated with superior supporting applications, and a highly secure network technology. With the form-factor of a pair of eyeglasses, it can improve the delivery of home-based care to the elderly by providing superior health and safety monitoring capabilities, as well as enhanced communication functions that are designed to improve quality of life, and reduce social isolation. The HAM device integrates the best-of-breed sensor hardware and wireless software innovations available today with sophisticated machine learning data analysis algorithms and methods.

Company Description: We are developing systems to improve the safety, independence and quality of life of elderly in the long-term home care setting. One of them is a wearable computer that will enable the elderly to live safer, more independent and fulfilling lives. It accomplishes this by providing vital information to them, their families, caregivers and providers about their health and well being. It also presents the opportunity to detect future dangerous events, such as falls, and help prevent them from happening.

Carrboro, North Carolina	<h2>Glycan Therapeutics</h2> <p>Biotechnology for Healthcare</p>
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Technology Name: biotechnology/enzymatic synthesis of carbohydrates

Technology Description: A novel enzyme-based method to synthesize carbohydrates

Company Description: A biotech company specialized in carbohydrate synthesis, developing therapies for thrombosis and tools to aid research in the study of sugar chains or glycobiology.



Athens, Georgia www.glycosensors.com	<h2>Glycosensors and Diagnostics</h2> <p>Biotechnology for Healthcare</p>
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Technology Name: Development of Glycosylation-Specific Research Reagents

Technology Description: G&Ds engineered Lectenz reagents have unique specificity and affinity for glycopeptides and glycoproteins. Lectenz have lectin-like glycan binding properties and are engineered from carbohydrate-processing enzymes. In principle, many carbohydrate-processing enzymes can be converted to Lectenz, enabling the development of a range of reagents specific for particular glycan linkages or compositions. This emerging technology will provide a new set of reagents to help facilitate glycomics and glycoproteomics at varying levels of the customer chain by impacting research scientists and biopharma manufacturing.

Company Description: Glycosensors and Diagnostics, LLC (G&D) is commercializing the Lectenz and GlycoSense™ platforms (patents pending) for high-throughput and cost-effective glycan identification and analysis. These enabling technologies address unmet needs in disease biomarker detection and the production and development of therapeutic biologics and biosimilars.

Seattle, Washington www.healionics.com	<h2>Healionics Corporation</h2> <p>Medical Devices</p>
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Technology Name: Advanced Vascular Access and Prosthetic Devices

Technology Description: Our implantable synthetic scaffold material has a unique porous geometry promoting integration with surrounding tissue. When applied to the outside of vascular grafts it inhibits fibrotic scar tissue formation around the implant. This removes the mechanical squeezing effect usually causing synthetic grafts to stiffen and clot. Avoidance of scarring retains the self-stabilizing flow behavior of natural vessels, offering a reliable long-term vascular access option for hemodialysis therapy that can be used with no changes in established procedures. Further, the scaffold technology interaction with the natural body defense cells enhances infection resistance, reducing a major complication of dialysis treatments.

Company Description: Healionics is developing bio-integrating synthetic vascular grafts that perform like natural blood vessels, overcoming flow blockage and infection problems. These grafts have a large and well established patient population needing improved vascular access for kidney dialysis.



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<p>Marlborough, Massachusetts www.helixbind.com</p>	<p>HelixBind, Inc Diagnostics</p>
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Technology Name: Diagnostic device for the rapid identification of BSIs

Technology Description: HelixBind is developing an automated, fire-and-forget, device for the identification of bloodstream infections without culturing, reducing the time-to-diagnosis from the current days to only a few hours. HelixBind Pathogen Identification (PID) system, employing artificial nucleic acids, encompasses 21 of the most prevalent pathogens in a single test directly from blood, requires no more than 2 hours to complete and will provide species level information, as clinically required to enable the most targeted treatment decisions. This crucial technological advance will decrease mortality rates, reduce the length of stay in hospitals thereby significantly reducing costs, and improve antibiotic stewardship.

Company Description: HelixBind is an early-stage company developing a proprietary platform that enables the rapid and device-based identification of bloodstream infections (BSIs) directly from patient specimens without culturing; revolutionizing the manner in which the disease is diagnosed. HelixBinds pathogen identification (PID) system enables the rapid detection of a large panel of pathogens, bacteria and fungi simultaneously, directly from blood with limits of detection as low as a few colony forming unit per milliliter in as little as two hours.

<p>Norwood, Massachusetts www.icetinc.com</p>	<p>ICET, Inc Medical Devices</p>
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Technology Name: antimicrobial medical device

Technology Description: Our technology has overcome the limitation compared to the existing silver based urinary catheters. The ICET product, TIC, is a coated Foley catheter assembled with an antimicrobial antireflux accessory; this configuration potentially blocks bacterial ascension via the catheter surface as well as via the lumen from the collection bag into the bladder; the antimicrobial elution profiles support sustained elution.

Company Description: ICET, is an experienced R&D technology company www.icetinc.com that has both commercialized and licensed products, eg. www.ogenix.com in the past. ICET continues to work on several R&D projects involving anti-infection materials, catalysts, protective clothing. The core expertise is in novel formulations, controlled release, device coatings, plastics extrusion, protective textile coatings as applied to the area of health care, environment and energy. The company is jointly owned by business and professionals, Shantha Sarangapani, Ph.D. and Sarang Sarangapani, Ph.D, M.B.A. They have an advisory group of several experts in the devices, therapeutics, regulatory, clinical area and business consultants with commercialization experience. At this time there is no external funding into ICET, therefore, the company is flexible on deal terms.



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College Park, Maryland www.igitechnologies.com/	<h2>IGI Technologies</h2> <p>Medical Devices</p>
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Technology Name: Image Registration Acceleration Engine

Technology Description: Interventional radiologists can perform procedures 5 to 15 minutes faster and with more confidence with IGI Techs image fusion technology. We provide this functionality by offering a box the size of a laptop with our patented fusion technology (the Image Registration Acceleration Engine). It performs real-time overlay of preprocedural images onto intraprocedural navigation images without any change to existing workflows. The benefit of the fusion is that instead of estimating an invisible target on a navigational image from nearby landmarks, targets may be seen directly on the preprocedural image, accurately fused with the navigational image.

Company Description: IGI Technologies is a University of Maryland-based startup focused on delivering high-speed image registration solutions to clinicians. Medical images taken of the same patient but on different equipment or at different times are difficult to overlay due to changes in the body from breathing, position, or morphology. We correct these misalignments automatically and on-demand.

Sammamish, Washington www.illionix.com	<h2>Illionix</h2> <p>Medical Devices</p>
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Technology Name: Dietary intake monitoring

Technology Description: The Dietary Data Management Platform (DDMP) prototype developed by Illionix in Phase I is designed to be a dietary assessment tool for research. The system serves for electronic collection, storage, analysis, and reporting of annotated dietary data. The main goal of the system is to capture maximum objective dietary data with minimum participant burden and time commitment. The main benefits of the DDMP system include low user burden, high accuracy measurement of food volume by direct objective laser imaging thus eliminating user bias, low cost, scalability, and standardization for streamlined data sharing between multidisciplinary users.

Company Description: Illionix is a high-tech start-up that specializes in development of sensor technologies for medical and military applications.



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Doylestown, Pennsylvania
www.immunotope.com

Immunotope, Inc.

Biotechnology for Healthcare

Technology Name: Therapeutic and Prophylactic Universal Dengue Vaccine

Technology Description: Utilizing our proprietary immunoproteomics approach, we have discovered and characterized a panel of novel dengue virus specific T cell antigens. These antigens have been formulated in a nanoparticle delivery for the development of a therapeutic and prophylactic vaccine offering protection against all four serotypes of dengue virus. Currently at the preclinical stage, this fully synthetic vaccine addresses the limitations of other vaccine candidates that focus on limited antibody mediated protection. In addition to substantial immunogenicity and protection, this formulation has natural adjuvant properties, stable at room temperature, overcome cold storage challenges and providing a substantial cost advantage over current vaccines.

Company Description: Immunotope is a clinical stage biotechnology company dedicated to developing new approaches to the treatment and prevention of recurrence of cancer and to therapeutic and prophylactic vaccines for infectious diseases. Utilizing a unique immunoproteomic approach, we focus on identifying clinically most relevant antigens, targeted directly to the T cell immune response. Our products activate the patients own immune system to fight disease and prevent recurrence. Our product portfolio includes ovarian, breast, lung, pancreatic and colon cancers and Influenza, Dengue, HBV, HCV, and HTLV-1 viral vaccines.

Webster, Texas
www.indusinstruments.com

Indus Instruments

Research Tools

Technology Name: Implantable biosensors and stimulators for small animals

Technology Description: Our far field radio frequency energy harvesting technique permits either battery-less or rechargeable battery based operation of implantable vital signs (ECG, Temperature, BP, SPO2, Glucose) monitors and cardiac/neuro stimulators for preclinical research use in mice & other small animals. Our telemetry devices allow data collection 1) under social housing conditions in mice (a first), 2) in any location (treadmills, mazes, vivariums), and 3) for an animal's lifetime without the need to surgically remove and refurbish consumable batteries.

Company Description: Indus Instruments is a Houston-based business established in 1992 that designs, manufactures and markets innovative preclinical mouse and rat research tools. All of our products are born out of collaborations with researchers and use the latest technology to improve workflows and increase physiologic data integration to empower informed decisions and enable novel types of investigational studies in mice and rats. Our products are used by researchers in hospitals, pharmaceutical companies and research institutions worldwide.



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Winnetka, Illinois www.infinitesimal-llc.com	<h2 style="margin: 0;">INFINITESIMAL LLC</h2> <p style="margin: 0;">Biotechnology for Healthcare</p>
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Technology Name: Single-Cell Biomolecular Delivery

Technology Description: No automated technology currently exists on the market that can transfect the same single cell over time within a population, which would allow precise nondestructive monitoring of individual cells. This capability would be transformative for applications in stem cell research, disease modeling, and gene editing, among others. Indeed, the NFP-E System would enable precise transfection of plasmids, RNA, and other biomolecules, to evaluate gene expression, phenotype, and regulatory networks at a single-cell level.

Company Description: iNfinitesimal LLC is a spin-off company from Prof. Horacio Espinosa's laboratory at Northwestern University that was founded on August 18, 2010. iNfinitesimal's mission is to advance emergent nanotechnologies from the lab bench to commercial markets, focusing on the life science market, to enable novel capabilities that are not possible with conventional tools.

River Edge, New Jersey www.inquisithealth.com	<h2 style="margin: 0;">InquisitHealth</h2> <p style="margin: 0;">Healthcare IT (software, simulation-based solutions, educations and training)</p>
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Technology Name: Peer-to-Peer Mentoring

Technology Description: Our patent-pending Mentor 1 to 1 platform is the key technology that will enable a fully scalable model of parent-to-parent mentoring. Specifically, the platform: (i) allows InquisitHealth to recruit, train, and manage parent mentors; (ii) allows InquisitHealth and health plan staff to enroll and match parents with mentors; (iii) allows parent mentors to connect with matched parents through a masked phone connection (for HIPAA purposes), to access talking points while on mentoring calls, to track self-management goals for their mentees, and to share smartphone-delivered, video-based mini-courses with mentees; and (iv) allows administrators to monitor, track, and generate reports based on these interactions.

Company Description: InquisitHealth, founded in 2012, helps health plans and hospital systems utilize peer-to-peer mentoring as a solution to improve health outcomes for their patients with poorly controlled chronic conditions. Peer mentors are patients that manage a chronic disease well who are then trained by InquisitHealth to coach other patients with the same disease. We currently work with diabetes, HIV, transplant, and dialysis patients.



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Wales, Wisconsin www.insertmri.com	<h2>Insert</h2> <p>Medical Devices</p>
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Technology Name: MR Guided Functional Neuro Surgery

Technology Description: The MRI is obtained during a pre-operative session; however, either brain shift, errors in device guidance, or device malfunction can lead to poor outcomes. In particular for infusion-based therapies, the location of the infusion cannula in the brain, the difficulty of predicting how agents will distribute through the complex nature of brain tumors, and loss of the therapeutic agent through backflow or other mechanisms may significantly influence the therapeutic outcome. The insert MRI system provides a unique solution for providing real-time, interactive brain imaging for drug infusion procedures by providing a workflow environment that is intuitive for neurosurgeons

Company Description: Proposal: Development of insert MR system: real-time, interactive brain imaging for drug infusion procedures, capable of integrating with any scanner platform; to include predictive models and an upgraded workflow. If successful, this system could address providing significant new capabilities for surgeons to dynamically interact with both the imaging system and the device to optimize device positioning and therapeutic monitoring, as well as predict the spatial distribution of drugs that are infused in the brain. Overall, the study section enthusiastically supported this significant and novel proposal with a high potential value for image-guided drug delivery trials in patients.

Boston, Massachusetts cartaichealth.com	<h2>Insightfil (Artaic Health, LLC)</h2> <p>Healthcare IT (software, simulation-based solutions, educations and training)</p>
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Technology Name: Medication Adherence

Technology Description: We link the providers electronic medical records system (EMR) to our central fill pharmacy partners' prescription management system (PMS) to our proprietary patient portal/app. Then, through proprietary interconnected/ integrated software applications, automated pill dispensing robotic workstations, and personalized on-demand packaging we deliver the first-ever comprehensive medication delivery, education, and adherence platform solution.

Company Description: 50% of prescriptions are never taken by patients. This non-adherence is attributed to 40% of treatment failures, 700,000 hospitalizations, one death every 19 mins, and \$300B impact to US healthcare. Funded by NIH, our comprehensive medication delivery, education, and adherence solution uses proprietary inter-connected software, pill dispensing robotic workstations, personalized on-demand packaging, and a patient app to link the providers EMR to the pharmacy prescription management system to the patient to close the care circle...leading to better health outcomes, higher patient satisfaction, and lower costs.



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Madison, Wisconsin www.isomark.com	<h2 style="margin: 0;">Isomark, LLC</h2> <p style="margin: 0;">Medical Devices</p>
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Technology Name: Canary Infection Monitor

Technology Description: Isomarks technology is focused on changes in carbon isotopes 12 and 13 (C12 and C13) in exhaled breath, referred to as the breath delta value. The breath delta value (BDV) can be thought of as the temperature of the immune system and provides a biomarker for infections at the earliest moments, in as little as 30 minutes after the acute phase response has begun which is the body's first reaction to a severe infection. Isomarks Canary infection monitoring system is non-invasive and has been demonstrated to detect infections up to two days before current best practices.

Company Description: Isomarks patented, market disruptive technology is focused on non-invasive and rapid infection detection using exhaled breath. In a successful proof-of-concept study Isomark detected infections up to two days before standard methods. Isomark enables targeting limited resources at patients who are truly developing infections, saving unnecessary diagnostic and treatment costs. Isomarks U.S. market is valued at over \$10 billion of annual, reoccurring sales. The Company has launched a multi-center pilot study in preparation for its regulatory pivotal trial; clearance is anticipated in late 2017. Isomark has assembled a team of experienced entrepreneurs, world-leading scientists, regulatory strategists, and industry and medical advisors.

Boston, Massachusetts www.mdpcontrols.com	<h2 style="margin: 0;">MDP LLC</h2> <p style="margin: 0;">Diagnostics</p>
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Technology Name: Commercial Launch of Standardized IHC Cancer Testing Controls

Technology Description: Immunohistochemistry testing is performed on surgical specimens (e.g., fragments of tumor removed during surgery) that are subsequently fixed in formalin. Leftover surgical specimens are too scarce and variable to use as a standardized commercial control. Surgical specimens are relatively complex substrates to simulate as a commercial control. Our innovation solves this problem in a manner amenable to low-cost mass production. The IHControls are a liquid suspension of cell-sized beads that behave in an equivalent manner (in the immunohistochemical assay) as formalin-fixed tumor cells. If the assay functions properly, the cell-sized beads become colored (as would tumor cells).

Company Description: MDP LLC is a diagnostics technology development company specializing in advanced histologic assay platforms. It was founded in 2003 by Dr. Steven Bogen, after selling his previous VC-funded company CytoLogix. CytoLogix developed the Artisan, the first automated special stains instrument (currently sold by Dako Corp). MDP LLC was founded to serve as a corporate structure for new technology development.



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<p>Ann Arbor, Michigan www.medarray.com</p>	<p>MedArray, Inc. Medical Devices</p>
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Technology Name: Gas Permeable Membrane

Technology Description: MedArray has developed a patented silicone membrane hollow fiber which has enabled the development of highly efficient blood oxygenators suitable for long term applications such as ECMO and prosthetic artificial lung. Because the membrane is dense it provides significant advantages over current art porous membranes, including resistance to plasma leakage and fouling. MedArrays platform membrane technology also has utility in a vast number of other life science applications including media gas control in cell culture bioreactors, water degassing for ultrasonic therapies, and pharmaceutical distillations and pervaporations.

Company Description: MedArray manufactures a proprietary gas exchange membrane and gas exchangers containing them. These gas exchangers can be used in multiple applications ranging from blood oxygenation, cell culture bioreactor media gas to control, to liquid degassing for ultrasonic therapies.

<p>Bozeman, Montana www.montanamolecular.com</p>	<p>Montana Molecular Pharmaceuticals</p>
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Technology Name: Fluorescent Assays for drug discovery and cell signaling

Technology Description: Robust fluorescent assays that can be combined to measure multiple signals in living cells.

Company Description: Montana Molecular has developed a suite of fluorescent biosensor-based assays for live cell discovery. Over 100 early adopters from academic, biotech and pharma labs have validated these products in a variety of cell types including pancreatic islet cells, neurons, cardiomyocytes and standard cell lines. These products translate the biological effects of drug activity into robust changes in fluorescence in the living cell. Industry recognition includes Innovation of the Year finalist at SLAS in 2013, JALA Top Ten Innovations in 2013, and selection for the BIO Innovation Zone in 2015. The company has filed two patents describing innovations in GPCR assays.



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<p>Evanston, Illinois www.ohmx.com</p>	<p style="text-align: center;">Ohmx Corporation Diagnostics</p>
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Technology Name: PSA Proteolytic Activity (PPA) test for prostate cancer prognosis

Technology Description: Ohmx has discovered and is pursuing development of a new biomarker for prostate cancer. Rather than measuring quantities of markers in samples, the Ohmx PPA test examines enzymatic activity in samples, and aims to reliably identify when cancers are non-aggressive and when cancers are likely to be upstaged. This test can be used in conjunction with traditional methods to aid prognosis, progression monitoring, and treatment decisions.

Company Description: Ohmx is developing a biomarker to assess prostate cancer aggressiveness and assist prognosis. The Ohmx PPA test is aimed at providing patients and doctors with a tool to make informed treatment decisions and identify when active surveillance may be a viable option. If appropriate, active surveillance can increase a patient's quality of life by avoiding unnecessary treatments, invasive procedures, and associated side effects. Ohmx is also developing a new type of diagnostic platform aimed at providing comprehensive and accurate diagnostic testing at the point of care.

<p>Vacaville, California www.oryntherapeutics.com</p>	<p style="text-align: center;">Oryn Therapeutics Biotechnology for Healthcare</p>
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Technology Name: Defensins

Technology Description: Proprietary peptide compounds for the treatment of chronic inflammatory diseases such as rheumatoid arthritis and acute inflammatory conditions caused by infectious diseases.

Company Description: Oryn is a biomedical research company founded in 2013 expressly for the development and commercialization of drugs based on therapeutic applications of theta-defensins. Currently Oryn is developing products in the areas of autoimmunity, inflammation, and infectious diseases.



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<p>Lexington, Kentucky www.paratechs.com</p>	<p>ParaTechs Corp. Research Tools</p>
<p>Technology Name: non-surgical embryo transfer device for mice and rats</p> <p>Technology Description: ParaTechs Non-Surgical Embryo Transfer (NSET) Device revolutionizes rodent embryo transfer by reducing costs and eliminating the need for animal anesthesia and recovery normally required for conventional surgical procedures to generate transgenic rodents used in biomedical research. The device can also be used as a non-surgical method for artificial insemination and for effective transfer of substances for studies of uterine physiology and bacterial infection.</p> <p>Company Description: ParaTechs is a research and development company whose mission is to develop and bring to market novel products in the areas of biotechnology specifically in the fields of insect molecular biology and rodent transgenics. Currently, ParaTechs has two products on the market, an insect cell line for enhanced protein production from the baculovirus expression vector system and a Non-surgical Embryo Transfer (NSET) Device for mice. The NSET device revolutionizes mouse embryo transfer by reducing costs and eliminating the need for animal anesthesia and recovery normally required for conventional surgical procedures. A NSET device for rats is currently under development.</p>	

<p>Champaign, Illinois www.photonicareinc.com</p>	<p>PhotoniCare Medical Devices</p>
<p>Technology Name: ClearView imaging platform</p> <p>Technology Description: PhotoniCare's founders have developed a method to non-invasively view through the eardrum and into the middle ear. Traditional methods used to diagnose middle ear disease look at the surface of the eardrum. Physicians then must guess at the condition of the middle ear, where the disease occurs. PhotoniCare's patented technology delivers near-infrared light alongside white light to simultaneously image both the surface of the eardrum and the contents of the middle ear. This novel view of the middle ear enables the user to identify biofilms and fluid buildup in the ear, to better prescribe an effective strategy for disease management.</p> <p>Company Description: PhotoniCare is an early-stage medical device firm developing the CLEARVIEW line of products, designed to change the standard of care for children with middle ear disease. The company is located in Champaign, IL and was spun out of the prestigious Beckman Institute at the University of Illinois at Urbana-Champaign. PhotoniCare's mission is to improve patient outcomes while decreasing healthcare costs by introducing game-changing technologies at the front lines of healthcare. PhotoniCare's first product is a handheld imaging device that can see through the eardrum to directly visualize infections that occur in the middle ear.</p>	



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Miami, Florida	<h2>PicoCal Inc.</h2> <p>Medical Devices</p>
<p>Technology Name: Blood borne pathogen removal</p> <p>Technology Description: We developed a versatile and simple antibiotic-free therapy to remove infectious microbial pathogens from the bloodstream with an initial focus on gram positive bacteria and in particular Staphylococcus aureus. Our platform technology can be easily modified to address other hard to cure blood borne pathogens.</p> <p>Company Description: Kytaro Inc. is developing a blood filtering system that kills and removes pathogens, such as antibiotic-resistant bacteria and cancer cells, from circulation.</p>	

Berkeley, California www.picoyune.com	<h2>Picoyune</h2> <p>Environmental technologies including remediation with air, soil, or water</p>
<p>Technology Name: Plamsonic mercury sensors</p> <p>Technology Description: Our technology is a powerful and portable mercury analyzer, combining the nanoparticle based detector with a thermal/catalytic sample introduction system. Gold nanoparticle-based plasmonic mercury sensing is inexpensive, ultra-sensitive, and ideal for portable applications. The thermal/catalytic sample introduction system will be low power, with low sample loss and high throughput; it also does not require the use of wet chemicals or other consumables. The commercial instrument resulting from combining these two subsystems will be lightweight (<20lbs), sensitive to levels of concern for remediation (<6mg/kg Hg), and operate on battery power.</p> <p>Company Description: Picoyune is a chemical sensing company whose patented plasmonic film technology can replace a labs bench worth of equipment with a robust portable detector that anyone can operate. Our first target is mercury, a potent neurotoxin and global pollutant.</p>	

Rockville, Maryland www.plantvax.net	<h2>PlantVax Inc</h2> <p>Biotechnology for Healthcare</p>
<p>Technology Name: Biotechnology</p> <p>Technology Description: PlantVax is developing a patented (US Patent #8168175) and unique inhaler based pre treatment solution to produce a pulmonary bio shield against inhaled nerve agents such as Sarin, Herbicides, Pesticides and other organophosphates.</p> <p>Company Description: PlantVax Inc was incorporated in MD in 2007 by Dr Yvonne Rosenberg, Founder/CEO. PlantVax started in the Shady Grove Incubator for Bio Technology companies and has grown to over 6,000 sq ft of lab space and multiple external plant growth sites for production of it's raw materials. Primarily focused on pre-clinical testing in two Phase II grants, PlantVax has also commercialized underlying Cholinesterases for detection and eradication of ChemBio warfare agents, and now seeks funding and partners for more targeted development to expand commercialization of its products, specifically therapeutics for the agricultural, security and defense sectors.</p>	



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Madison, Wisconsin www.platypustech.com	<h2>Platypus Technologies LLC</h2> <p>Research Tools</p>
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Technology Name: 3D Cell Assays

Technology Description: The innovation in the proposed product is the creation of a 3D cell-free analytic zone in the center of each well of a 96-well plate surrounded by a cell population seeded in 3D. The assay thereby delivers a 3D format that can be analyzed in real time using high content and high throughput imagers, or standard microscopy techniques, or inexpensive plate readers, all without the need for elaborate cell tracking capabilities.

Company Description: Platypus Technologies develops cell assay systems for life science research; and low-cost high performance liquid crystal sensors for environmental monitoring of toxic gases. The companys domain expertise encompasses surface science, interfacial science, and life science hence the vision of bringing science to the surface. Sources of capital include product sales, licensing, federal research grants, contracts, debt, and equity investments. Since its founding in 2000, Platypus has established a uniquely broad set of technological capabilities, plus an intellectual property portfolio comprising 43 issued patents and 25 pending applications. This request for CAP support is for the cell assay business unit.

Lebanon, New Hampshire www.preventagehealthcare.com	<h2>PreventAGE Health Care</h2> <p>Diagnostics</p>
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Technology Name: Prognostic Identification of Propensity to Develop Complications Due to Diabetes

Technology Description: The diabetes epidemic, and the devastating complications (kidney failure, blindness, cardiovascular disease) that accompany it, have created an unprecedented worldwide medical crisis. Until now, physicians have been unable to predict which patients are most likely to develop these complications, and hence are unable to tailor medical treatment to their specific individual needs. Using proprietary methods, we identify specific biomarkers, Advanced Glycation End Products (AGEs) or Oxidative Products (OPs), which predict an individuals risk for specific complications. PreventAGEs technology changes the current paradigm to fundamentally improve the care of patients with diabetes by providing precise, actionable information well before symptoms appear.

Company Description: PreventAGE Health Cares overarching objective is to fundamentally improve the care of patients with diabetes and thereby improve their quality of life, health status and longevity. PreventAGE Health Care, LLC employs precision bioanalytical technologies and algorithms to inform patients with diabetes to their personal risk for developing specific complications related to their diabetes, e.g., kidney, heart, eyes, limbs, nerves. Our report, Compass (Complications Propensity Assessment), will be used by physicians and patients to predict risk, personalize treatments, improve outcomes, and reduce healthcare costs.



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South Kingstown, Rhode Island www.prochange.com	<h2>Pro-Change Behavior Systems, Inc</h2> <p>Healthcare IT (software, simulation-based solutions, educations and training)</p>
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Technology Name: Healthy Pregnancy Mobile Health Behavior Change Intervention

Technology Description: Our technology enables us to leverage best practices of behavior change science including dynamic and individually tailored communications based on the science of behavior change in a standardized and optimal way to impact multiple risks direct to consumer on any Internet-enabled device. This allows for low-cost, sustainable, flexible, and broad scale dissemination.

Company Description: Pro-Change Behavior Systems, Inc. is committed to helping our partners enhance the health and well-being of individuals and organizations through the scientific development and dissemination of high-impact behavior change management programs based on leading theories of behavior change, especially the Transtheoretical Model. To date, our primary markets have included employed, insured adults, who have generally been offered our interventions (e.g., for medication adherence, stress management, depression management, and weight management) through the workplace. Pro-Change currently licenses programs to multiple dissemination partners, each of whom pays an annual licensing fee.

Baltimore, Maryland www.profectusbiosciences.com	<h2>Profectus BioSciences</h2> <p>Biotechnology for Healthcare</p>
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Technology Name: Genetic Adjuvants

Technology Description: Delivered without in vivo electroporation, DNA and RNA based vaccines need adjuvants to induce an immune response. Unfortunately, genes expressing single cytokines only induce a small part of the immune response which may be inadequate to protect against an infectious agent such as viruses. Profectus has developed genetic adjuvants that are capable of inducing the symphony of immunity necessary to provide effective defense against infection after vaccination with a genetic vaccine.

Company Description: Profectus is a clinical-stage biotechnology company pioneering a major evolutionary step in the design and development of preventive and therapeutic vaccines. Our novel approach is based on a proprietary technology platform that allows us to quantitatively and qualitatively tailor effective immune responses to specific targets. The Prime/Boost System of Vaccines (PBS Vax) provides the ability to tune the immune response to whatever is required for a specific target and disease context. The exceptional flexibility of this platform enables us to overcome the shortcomings of current DNA and classic prophylactic vaccines and address targets of high unmet medical need.



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<p>Pleasanton, California www.q-chem.com</p>	<p style="text-align: center;">Q-Chem</p> <p>Healthcare IT (software, simulation-based solutions, educations and training)</p>
<p>Technology Name: Efficient double hybrid density functional theory algorithms for conformational and binding energies</p> <p>Technology Description: Our software product, also called Q-Chem, is a comprehensive software package for modeling chemical compounds, biomolecules, and materials. Our staff scientists work with our 200+ developers (from over 30 research groups at top-tier academic institutions in 10 countries) to bring the latest innovations in the field of computational chemistry modeling into our product. With this particular NIH SBIR project, we work with our collaborators at the University of California at Berkeley to further improve theoretical models for computing conformational and binding energies, which will benefit biochemical and biomedical research in academia and in industry.</p> <p>Company Description: Q-Chem is an advanced computational chemistry software company. Based in Pleasanton, CA and governed by a distinguished board of directors, we serve the computational chemistry needs of scientists at academic institutions, government labs, and pharmaceutical and chemical companies all over the world. Our software, also named Q-Chem, incorporates the state-of-the-art computational chemistry modeling methods. It is being used regularly by tens of thousands of users in their daily chemical, biochemical, biomedical, material and energy research.</p>	

<p>Beverly Hills, California</p>	<p style="text-align: center;">Scarless Laboratories Inc.</p> <p style="text-align: center;">Biotechnology for Healthcare</p>
<p>Technology Name: A novel anti-scar peptide for cutaneous wound repair</p> <p>Technology Description: Through a sustained, 14-year research effort examining models of fetal wound healing, SL has identified a protein required for fetal scarless skin repair. This protein decreases scarring and improves wound tensile strength in adult wounds. These findings have been confirmed across multiple mammalian species. As a technological innovation, SL has developed a 40 amino acid peptide sequence, which can undergo rapid and inexpensive production and is similar to the full protein in its anti-fibrotic effects.</p> <p>Company Description: Scarless Laboratories Inc. (SL) is a UCLA startup company that was founded to develop novel technologies to improved wound healing. Through a sustained, 14-year research effort examining models of fetal wound healing, SL has identified a protein that can decrease scarring and improves wound tensile strength. As a technological innovation, SL has developed a 40-amino acid peptide sequence, which can undergo rapid and inexpensive production and is similar efficacy to the full protein. The current goal of SL is to allow bench to bedside translation of this peptide-based therapy to prophylactically reduce cutaneous scar formation.</p>	



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National Institutes of Health
Commercialization Assistance Program (NIH-CAP)

<p>Livermore, California www.shaltech.com</p>	<p>SHAL Technologies Inc Pharmaceuticals</p>
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Technology Name: Biotechnology/Cancer drug development

Technology Description: Our selective high affinity ligand (SHAL) platform makes it possible to design small molecule drugs and diagnostics that target and bind with high affinity to any site on a protein, including many currently considered undruggable. SHAL drugs, which function similar to ADCs and prodrugs, are created by identifying ligands (recognition elements) that bind to neighboring cavities on the surface of the target protein and linking them together. SH7139, our most advanced B-cell lymphoma and leukemia drug, has demonstrated exceptional preclinical responses with human tumors in mice (70% cure rate compared to Rituximabs slowing of tumor growth) with no systemic toxicity.

Company Description: SHAL Technologies is applying our selective high affinity ligand (SHAL) platform to the development of more efficacious, less toxic and more cost effective treatments for advanced cancers. SHALs provide a new paradigm for the treatment of cancers and other diseases through the design and use of highly targeted small molecule therapeutics that function similar to both antibody drug conjugates and pro-drugs. These drugs are systemically non-toxic and have the potential to provide complete responses rather than incremental increases in the delay of disease progression.

<p>Aurora, Colorado www.clearsightiol.com</p>	<p>Sharklet Technologies, Inc. Plastics</p>
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Technology Name: Intraocular Lens

Technology Description: The ClearSight IOL represents a unique IOL design that solves issues inherent to current IOL designs. The innovative shape and texture of this IOL, consisting of a membrane with a microscopic surface texture and a circumferential ridge that surrounds the central optic, creates a barrier effect around the central lens that better protects the lens from encroaching cells. In current designs, these cells grow into the visual space behind the lens and cause clouded vision. This is the most common complication of cataract surgery and is preventable with use of the ClearSight IOL.

Company Description: Sharklet Technologies, Inc. utilizes its patented microscopic surface texture to control cell and fluid movement on medical device surfaces. This biomimetic surface texture along with a novel Intraocular Lens (IOL) design will improve the outcomes of cataract surgery. This novel IOL will be the first intervention to reduce the number one complication of cataract surgery, in which patients lose vision for a second time due to cells clouding their new lens. This unique IOL is designed to prevent cells from clouding the lens utilizing both a novel macroscopic IOL design and a biomimetic surface texture.



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Potomac, Maryland	<h2 style="margin: 0;">SynerGene Therapeutics, Inc.</h2> <p style="margin: 0;">Biotechnology for Healthcare</p>
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Technology Name: Biotechnology/Cancer

Technology Description: SGT's platform technology involves a nanocomplex that "homes" to cancer cells like a targeted missile while causing minimal "collateral damage" to normal cells. Tumor specificity is based on a targeting moiety that recognizes a molecule overexpressed on the surface of cancer cells. The SGT nanocomplex is modular in nature and can carry a variety of payloads (e.g., genes, therapeutic oligonucleotides including siRNAs, small molecules and contrast agents for imaging). Numerous patents cover both the nanocomplex formulation, its components and its use of the nanomedicines in a variety of therapeutic and diagnostic applications including delivery of an MRI contrast agent.

Company Description: SynerGene Therapeutics Inc. (SGT) seeks to improve outcomes for cancer patients through innovative therapeutic and diagnostic products based on an extensive patent portfolio. SGT's technology involves a nanocomplex that "homes" to cancer cells like a targeted missile with minimal "collateral damage" to normal cells. It can carry a variety of payloads (e.g., therapeutic genes, oligonucleotides and small molecules or contrast agents for imaging). SGT has already succeeded in filing three INDs and has its lead products in six therapeutic clinical trials including two Phase IIs. SGT funding has included federal grants and contracts, sponsored research agreements, and sale of equity.

Menlo Park, California www.synthomics.com	<h2 style="margin: 0;">Synthomics, Inc.</h2> <p style="margin: 0;">Biotechnology for Healthcare</p>
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Technology Name: DNA Synthesis, synthetic biology

Technology Description: Our synthesizer produces 1,536 unique, synthetic DNA sequences in parallel. The industry standard is 96. Our specific innovations together reduce the cost of the synthetic DNA by a factor of 16x and increase throughput by the same factor. Our innovations include a unique synthesis support (a consumable), methods of tightly controlling the speed and accuracy of the instrument that synthesizes the DNA, and in-process quality checks on the DNA. Synthetic DNA is used in genetic engineering, forensics, DNA sequencing, and most other areas of biological and medical research. Cost reduction will have an enormous impact on medical and research cost.

Company Description: Synthomics, Inc. is a startup biotechnology company that has developed a novel RNA and DNA oligomer synthesis instrument that produces custom sequences at 16x higher throughput and 16x lower cost than any other platform on the market. The synthesizer is called the "Green Machine" due to reduced reagent consumption and efficient production of DNA. Our primary strategy is to sell the instrument to core facilities and end users of synthetic RNA and DNA to leverage the sale of high margin reagents, synthesis plates (solid supports), and other consumables.



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National Institutes of Health
Commercialization Assistance Program (NIH-CAP)

<p>Stony Brook, New York www.theragnostictechnologies.com</p>	<p>Theragnostic Technologies Incorporated Diagnostics</p>
<p>Technology Name: High Performance Nanoparticle MRI contrast agent</p> <p>Technology Description: Currently, 99% of MRI contrast agents are gadolinium-based and have high risk of toxic side effects and unsuitable for advanced imaging techniques. Our patented novel high-performance nanoparticle based MRI contrast agent platform ManGraDex is completely different from all CA's on the market. It comprised of non-toxic manganese, graphene and dextran. Upon complete development, ManGraDex should greatly improve MRI safety and efficacy, while expanding MRI markets into unserved renal and cardiovascular patient populations. The addressable worldwide market is >\$10 Billion.</p> <p>Company Description: Theragnostic Technologies is a pre-clinical stage biotech company that leverages our proprietary nano-based carrier platforms to develop solutions for diagnostic, therapeutic & regenerative medicine. From a pipeline of candidates, our first product ManGraDex, is a breakthrough level highly differentiated MRI contrast agent with total addressable world wide market >\$10B. Having completed proof of safety non-GLP studies, Our SBIR phase 2 grant will move ManGraDex thru IND to FDA Phase 1.</p>	

<p>San Francisco, California www.theranova.com</p>	<p>TheraNova LLC Medical Devices</p>
<p>Technology Name: Medical Device</p> <p>Technology Description: We offer a novel, minimally invasive urinary catheter that enables automatic, continuous and real-time measurement of physiological parameters that play a key role in the early onset of sepsis. The Canary Catheter will be broadly applied in the intensive care units and burn centers where sepsis is a common killer. Earlier and automatic detection of sepsis are mainly expected to significantly reduce costs due to shorter burn center and ICU stays and minimal nursing staff burden.</p> <p>Company Description: TheraNova is a medical device development company focused on developing solutions to large markets with unmet clinical needs. The company's long-term objective is to improve outcomes for patients, reduce healthcare costs for patients or payers and improve access to healthcare. The internal concept generation aspect of TheraNova is embodied in an intellectual property holding company that has filed patents for, and is in the process of incubating, multiple medical devices. TheraNova has focused exclusively on its rapid, highly capital efficient development process since its inception in 2005.</p>	



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Berkeley, California www.valitorbio.com	<h2>Valitor, Inc.</h2> <p>Biotechnology for Healthcare</p>
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Technology Name: Multivalent protein conjugation

Technology Description: Using our core technology platform, we have developed multivalent conjugates of Sonic hedgehog (Shh), a potent promoter of neovascularization during tissue regeneration. Shh exhibits a short in vivo half-life, which has limited its use as a drug. Our multivalent conjugates of Shh exhibit enhanced potency and stability, and thus it has demonstrated superior performance to heal diabetic wounds compared to unconjugated Shh in preclinical models. We are developing this drug product to enhance wound healing and integration of skin grafts.

Company Description: Valitor, Inc. is a biotechnology company developing advanced, protein-based drugs with exquisite control over their pharmacological properties. Our core technology platform is the production of soluble, nanoscale clusters of proteins conjugated to single-chain biopolymers. By tuning the size of the conjugate and number of protein copies on each biopolymer backbone, we can engineer their potency, stability and duration of their bioactivity. We believe our technology platform could be broadly applied to improve the pharmacological properties of many protein drugs that are currently approved or under development. We have a pipeline of biologic therapies that demonstrate the utility of our technology.

Albuquerque, New Mexico visionquest-bio.com	<h2>VisionQuest Biomedical, LLC</h2> <p>Medical Devices</p>
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Technology Name: Portable, hand-held non-mydratic retinal camera: i-RxCam

Technology Description: The i-RxCam is a portable, low-cost retinal camera that integrates software for image quality enhancement and diabetic eye disease detection making it a one-stop imaging and diagnosis device. Currently, there is no such device in the market. The i-RxCams advantages over its competitors are: 1) 50% lower cost over the cheapest camera available in the market, 2) ease of use by a minimally trained medical technician, 3) real-time feedback and enhancement for capturing better quality images, and 4) on-the-spot diagnosis of retinal diabetic disease.

Company Description: VisionQuest Biomedical LLC (VisionQuest) is a biomedical research and development (R&D) company founded in 2007 with the objective of bringing affordable medical devices to the ophthalmic and diabetes care markets with the goal of ending blindness by 2020. VisionQuests objective is to become a foundation-level company developing IP and licensing its products to medical device companies. VisionQuest's focus is on low-cost, portable imaging technology for use in diagnosing ophthalmic diseases and diabetes complications.



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<p>San Diego, California www.winsantor.com</p>	<p>WinSanTor Pharmaceuticals</p>
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Technology Name: Treatment for Diabetic Neuropathy

Technology Description: The scientific founders of WST, the leading researchers in diabetic neuropathy have identified an apparent underlying mechanism eliciting neuropathy, and more importantly, a class of compounds that modulate this pathway to PREVENT AND REVERSE the mitochondrial dysfunction, nerve fiber depletion and sensory loss associated with peripheral neuropathy. This proprietary class of compounds are the basis for WinSanTors extensive portfolio of potential therapeutic drugs; with WSTs lead compound (WST1) slated to begin Phase 1 trials in mid/late 2015 in Europe as a topical treatment for diabetic neuropathy.

Company Description: WINSANTOR is a San Diego clinical-stage company focused on the accelerated development of first-in-class therapies to prevent and reverse peripheral neuropathy.

<p>Chicago, Illinois www.zuchem.com</p>	<p>zuChem, Inc. Industrial Biotechnology</p>
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Technology Name: High yield production of GDP-fucose for fucosylation of molecules

Technology Description: Fucosylated oligosaccharides in the cell are involved in many biochemical recognition processes, microbial infections, toxin entry, and cancer cell metastasis as well as . These properties make fucosylated molecules valuable for pharmaceutical and drug discovery needs, but current production methods are very expensive and impractical. Our goal is to increase accessibility of fucosylated molecules, such as human milk oligosaccharides (HMOs) to enable a better understanding of the role of these compounds in human health using a novel scaleable production system for a key fucosylated intermediate (GDP-I-fucose) to drive production of the fucosylated HMOs and related molecules.

Company Description: zuChem is a leading producer of unique sugars for human health and nutrition. zuChems proprietary bioprocess platform enables the scaleable production of carbohydrate-based products that are currently too expensive, impractical, or impossible to make, using raw materials such as inexpensive agricultural and forestry biomass or other commodity sugars. The zuChem products cover a diverse range of applications and industries from food and nutritive ingredients (such as polyol sweeteners and prebiotic oligosaccharides) to fine chemicals and pharmaceutical intermediates (such as rare sugars, therapeutic oligosaccharides, and glycoconjugates), which it produces in-house (below kilo scale) or in partnership with strategic manufacturers.