New Jersey CSIT
Commission on Science, Innovation and Technology

Annual Report
2024 - Company Profiles

2024 PROFILES OF COMPANY AWARDEES

APPENDIX A: Catalyst Seed Grant - Round 2 Awardee Company

Name of Company	Description	# of Employees (at time of application)
Atux Iskay Group LLC, Middlesex County	Atux Iskay is developing small molecule activators of the tumor suppressor Protein Phosphatase 2A. Our lead compounds ATUX-5800 and ATUX-1215 are novel, proprietary, and protected by the recently published PCT patent application WO/2023/023594. The compounds are drug-like, have good oral bioavailability, and cross the blood-brain barrier. The therapeutic to examine senotherapeutic effects of PP2A activators in glioblastoma (GBM), where therapy induced senescence (TIS) is established with temozolomide.	2
Bionex Pharmaceuticals LLC, Middlesex County	Bionex is developing and commercializing a novel extended-release topical product of a short acting ß blocker, esmolol (half-life 4 min) as an effective, easy to use, once daily treatment for IH, with a significantly improved safety profile. Key aspects of our innovation are (1) using esmolol which has a desirable balance of skin permeability and rapid xenobiotic deactivation to achieve high local and low systemic concentrations of the drug, (2) designing a once a day topical formulation that is easy to apply and safe to use in infants, and (3) optimizing efficacy by administering the drug transdermally over an extended period to provide higher concentrations to the target tissue in the hemangioma for a sustained period.	4
Inaedis Inc, Mercer County	INAEDIS proposes to develop a platform technology for rapid room temperature dehydration of vaccines and biopharmaceutical formulations using ultra-fine droplet aerosols, eliminating the need for logistically challenging cold chain infrastructure. Some 20% of pharmaceuticals - around $35B in value - are estimated to be damaged by poor temperature control during transport alone, and the challenges of maintaining cold chain during storage and handling only add to wastage and reduced efficacy. INAEDIS has developed a method of Rapid Room Temperature Aerosol Dehydration (RTAD), a scalable system for continuous dehydration of liquid pharmaceutical and biopharmaceutical formulations that provides thermal stabilization of biological drugs and eliminates the need for a cold supply chain.	1.5

Name of Company	Description	# of Employees (at time of application)
Kanvas Biosciences Inc,	Kansas Biosciences will develop a novel LBP consortium that can recapitulate the natural diversity of the healthy Middlesex County vaginal microbiome. They will use the platform to examine over 100 combinations of up to 16 species of bacteria sourced from healthy donors. They will evaluate the ability of these candidate consortia to compete with the pathogen G. vaginalis and isolate the most promising therapeutic candidates that have the strongest potential to reduce G. vaginalis colonization of epithelial cells. At the end of the project, promising candidates will be tested in a mouse model of BV to examine in vivo engraftment and therapeutic effect. If successful, we will move the candidate consortia into clinical trial. Kanvas Biosciences are eager to leverage our state-of-the-art HiPR-Screen platform to drive the development of novel LBPs.	16
Kathera Bioscience Inc, Union County	Kathera is developing therapies to treat life-threatening fungal diseases by validating essential fungal enzymes as new and patentable drug targets. THe fungal Dihydrofolate Reductase (DHFR) program. The program's goal is to identify one or more small molecule inhibitor scaffolds and progress them into hit-to-lead R&D programs. This research is innovative because (1) DHFR is essential for fungal growth and conserved among pathogenic fungi, suggesting potential for broad-spectrum agents, (2) structural studies reveal significant differences between fungal DHFR and its human DHFR ortholog suggesting fungal-specific inhibitors are feasible, (3) DHFR is distinct from existing antifungal targets minimizing cross resistance and (4) our data demonstrates DHFR can be inhibited by small molecules.	7
Lactiga US Inc.,	Lactiga is developing LCTG-001, a purified polyclonal Middlesex County secretory IgA (sIgA) therapeutic extracted from human systematically the properties of the compounds in-vitro and preclinical models, and achieved excellent in-vivo lipogenesis inhibition in animal model, which is 10-20 times better than public available data, (3) the technology has received patent in US, Japan, Mexico, (4) it is a promising disruptive approach to offer treatment for NAFLD, NASH, T2D, acne, and maybe some cancers.	3

Name of Company	Description	# of Employees (at time of application)
Primo Pharmatech LLC, Somerset County	Primo Pharmatech has developed a proprietary sublingual delivery platform that demonstrates enhanced sublingual or buccal absorption of hydrophilic drug molecules with molecular weights lower than 1200 g/mol. A preliminary in vivo study in rats has demonstrated a bioavailability of 0.96% for sublingual oxytocin in comparison to IV injectable (Oxytocin MW1007.19). The ultimate goal is to use this sublingual delivery platform to develop a sublingual formulation of a small peptide Difelikefalin (DLF) for the treatment of Chronic Kidney Disease- associated Pruritus (CKD-aP).	4
Quixgen, Inc.,	Quixgen's key developments of the innovation include (1) Middlesex County synthesizing a class of novel compounds, (2) evaluating systematically the properties of the compounds in-vitro and preclinical models, and achieved excellent in-vivo lipogenesis inhibition in animal model, which is 10-20 times better than public available data, (3) the technology has received patent in US, Japan, Mexico, (4) it is a promising disruptive approach to offer treatment for NAFLD, NASH, T2D, acne, and maybe some cancers.	3
Sauvie Inc, Essex County	Sauvie is developing a novel bispecific NK cell engager that harnesses the power of the body's innate immune system. The bispecific NK engager is derived from a small fragment of a camelid heavy chain antibody and the two small fragments (or binding sites) target a receptor on NK cells (CD16a) with high affinity and high specificity that activates the potent anti-cancer activity. The other binding site binds to the HER2 tumor antigen. The modular structure of this molecule creates potential to swap out the HER2 tumor antigen targeting for other solid and hematologic tumors. Funding will be used to conduct a non-GLP in vivo study to translate the in vitro results that were published.	4

Name of Company	Description	# of Employees (at time of application)
Vitruviae LLC, Essex County	Vitruviae LLC is developing VIT-GLT3, an immunotherapy that helps the immune system recognize and destroy tumors, regardless of tumor type or genetic mutation. VIT-GLT3 is the first therapeutic that binds two cancer signatures, Man9 (a cancer sugar) (Oh, 2022, Skupakova, 2021, de Leoz, 2011) and PS (a lipid exposed on cancer cells) (Birge, 2016) and engages T cells of the immune system to destroy bound tumors. VITRUVIAE invests in making drugs designed, tested, and formulated for children and is dedicated to advancing well-designed pediatric clinical trials rather than extrapolating data from adult studies at lower doses, which does not work and delays access to life-saving drugs for children.	2
Zena Therapeutics, Mercer County	Zena Therapeutics is a drug discovery company, spinning out of Rutgers University, designing new medications for mental health and addiction by improving safety profiles. Currently the work at Zena focuses on acute anxiolytic compounds that do not increase the risk of overdose if taken concomitantly with other central nervous system depressing substances such as opioids and alcohol. Our novel compound, protected by a PCT filed by Rutgers University, is a partial GABAA positive allosteric modulator (GABAAR PAM) with preliminary studies showing favorable pharmacokinetics, robust anxiolytic activity (in rats) and favorable safety characteristics. The project will synthesize and test analogs created our CSIT Voucher grant to determine range of efficacy on anxiety-like symptoms in mice in in vivo studies.	2

APPENDIX B: Catalyst Seed Grant - Round 3 Awardee Company

Company name / County	Project Description	# of Employees
AlphaROC Inc. (Essex County)	At this point, we have built a suite of AI-powered tools that leverage several unique data sets to help investors gain insights into a business's present and future economic health in a frictionless, unbiased, and personalized manner. Our proprietary data combined with carefully constructed data partnerships allow us to construct an ensemble that provides investors with very accurate forecasts around all kinds of “Macro” and “Micro” data.	3.9
ANJO.AI INC. (Bergen County)	Anjo.ai has pioneered a revolutionary technology for the early detection of life-threatening allergic reactions, specifically Anaphylaxis. Through the utilization of specific biomarkers from a wearable device and a proprietary algorithm, the company successfully demonstrated early detection of anaphylaxis at a prominent Israeli Allergy Institute—15 to 45 minutes before visible symptoms manifest, contingent on the extent of allergen exposure. Timely intervention plays a crucial role in addressing life-threatening allergic reactions. Studies have shown that delayed treatment can lead to prolonged hospitalization, complications, and even death. Anjo.ai is will remotely alert and facilitate early intervention, potentially saving lives, reducing medical costs, and providing relief to families grappling with severe allergies. Additionally, the company will responsibly collect and process data with user consent, supporting the research community and continually enhancing personalized care and chronic condition management for its users.	2.1
Balcony Technology Group Inc (Hudson County)	Balcony offers a groundbreaking shift in managing and safeguarding real estate data. By not only tokenizing data, but demonstrating the provenance of each datum, cryptographically signing every interaction, as well as presenting both a snapshot and complete version history of the dataset, Balcony elevates the fidelity and integrity datasets so they can be reliably used by governments, institutions and citizens alike. To achieve this goal, Balcony has built new primitives capable of handling the quantum, quality and cadence of data unique to real estate; we’ve created our own custom blockchain, an entirely new NFT protocol the reNFT.	8.6

Company name / County	Project Description	# of Employees
BioNanoTech LLC (Mercer County)	BioNanoTech offers a new class of IMAC nanoresins that provide high purity in a single-step separation of both cytosolic and membrane proteins. This scientific breakthrough addresses the hurdles of metal ion leaching, size-variant protein capacity, and denaturation of proteins. Our IAC (Protein A) nanoresins are developed specifically for antibody purification, which has over 10x more capacity than current market leaders.	6
Conduiit (Hudson County)	Conduiit is building a film/tv tax incentive rule engine that will give a variety of stakeholders the ability to better audit their qualified expense spending. This will give states better data and filmmakers better access to incentive dollars.	2.3
Conductink, LLC (Burlington County)	Overall, our technology provides the end-user the flexibility to design and create specific diseased-state models tailored to their drug candidate. Our advanced materials yield the ability to model and 3D bioprint (3DP) unique vascular networks that are representative of human physiology. These materials are biocompatible to human blood and provide the ability to perfuse and recirculate flow for extended periods of time. Our system provides the building blocks for drug developers to customize their own Alzheimer's model based on the intended mechanisms of their drug.	1.4
Dandelion Science Corp (Hudson County)	Enlighten™: a novel therapeutic for dry AMD Dandelion proposes to apply AI-generated algorithms to visually stimulate the brain and retrain it to compensate for central vision loss in the same way that software algorithms can be applied to a digital image to compensate for a digital camera's cracked lens. The complex, dynamic visual stimuli that make up Dandelion's generative video are designed to "prime" the brain – to get it ready to learn – and to refocus the patient's perceptual processing toward healthy retinal locations in peripheral vision that have been spared by the disease. Enlighten™, Dandelion's novel therapeutic, combines generative video with selected visual training exercises. It will be made available as a mobile application that patients can download and use at home, at their convenience, to unlock better vision.	6.6
EnaChip Inc (Somerset County)	Our groundbreaking innovation revolves around a proprietary high-frequency electroplated multilayer magnetic alloy, which is highly versatile and tailored to diverse applications. This cutting-edge technology not only caters to high-current density wafer-level inductors but also extends its capabilities to encompass signal isolation, transformers, magnetic sensors, and a myriad of other functionalities. Part of EnaChip's unique innovation is the ability to program the magnetic alloy composition to optimize performance. In addition, EnaChip has invented and is commercializing unique microfabrication processes that, for the first time, enable on-silicon cost-effective integration of magnetic components.	11.6

Company name / County	Project Description	# of Employees
Endomedix, Inc. (Essex County)	PlexiClot™ is designed for use as an absorbable hemostat, initially for use in brain & spinal procedures. PlexiClot™ will be delivered as a spray by neurosurgeons during brain & spinal procedures via a handheld instrument. A surgeon will spray PlexiClot onto a bleeding site. The spray quickly (2 sec) forms a multifunctional 3-D structured & dynamic in situ (in place). PlexiClot provides 3 physical (device) functions – it does not utilize a chemical or drug action to produce its effect. (1) it forms a tamponade to quickly stop blood flow (achieve hemostasis) within 20 ± 3 seconds; (2) the patented 3-D structure captures, aggregates & concentrates platelets & red blood cells to quickly form a stable clot (ultimate goal); (3) the patented chemistry causes the PlexiClot device to gently shrink even when used in a wet environment. Also, PlexiClot will be the first device specifically approved by FDA for brain surgery	2.3
Fuceltech (Mercer County)	The company is developing a special type of lasers for atomic and quantum sensors including quantum computing applications. These applications such as for atomic sensing which delivers ultra-high precision atomic clocks and highest sensitivity magnetometers to replace conventional GPS navigation and Qubits for quantum computers are looking for better laser performance that our lasers can deliver.	8
HEAL R WORLD LIMITED LIABILITY COMPANY (Somerset County)	HealRWorld's relationship with Mastercard helped spark the idea that an innovative branded debit card, next generation super app, a give back volunteerism program in collaboration with Seton Hall Sports (a subsidiary of Learfield Sports), and Seton Hall University Division of Volunteer Education would result in a robust social impact fintech program.	16
Innovations Unlimited LLC (Camden County)	We are developing an alarm that alerts caregivers of a pending or actual dislodgement or decannulation of a tracheostomy tube. The innovation will monitor the position of the tracheostomy tube and if the tracheostomy tube moves outside of a predetermined distance, the caregiver will be alerted by a visual and audible alarm.	2

Company name / County	Project Description	# of Employees
MIRAKARE INCORPORATED (Middlesex County)	The MiraKare platform seamlessly integrates both quantitative and qualitative health data, ensuring a comprehensive understanding of the care recipient so that the caregivers can better care for them. This real-time data is securely uploaded to our HIPAA-compliant cloud platform, where the analytical capabilities of AI and machine learning algorithms developed by our team discern patterns and trends. Beyond individual care, our platform aspires to contribute to collective knowledge. With patient consent, the data we accumulate will support patient advocacy groups, researchers, and pharmaceutical companies in advancing therapies, gaining deeper insights into the care recipient's journey, and fostering a holistic understanding of the care experience	2.7
NeuroPair, Inc. (Mercer County)	NeuroPair's technology can provide the necessary environment for guided neuron regrowth. The specific innovation is three-fold: 1) An aligned scaffold that quickly conforms to any irregular shape of an injury site, providing a personalized neural scaffold for each patient. 2) A treatment approach that is minimally invasive, fast and compatible with other orthogonal approaches, such as stem cells. 3) A method of adding live cells directly during scaffold fabrication in situ (via injection and magnetic alignment), allowing for precision placement of clusters of different cell types within aligned scaffolds and scaffold layers. Importantly, cells can be harvested from the skin of a SCI patient shortly after the injury and then be reprogrammed into neural progenitor cells that are co-injected with our 'Fibermag' scaffold. Since they originate from the patient herself, they will not be rejected by the patient's body, as cells from any other donor would.	1.7
Next Breath, Inc. (Middlesex County)	Next Breath's innovative approach to managing Chronic Obstructive Pulmonary Disease (COPD) and anxiety integrates cutting-edge technology and healthcare in a unique, user-friendly mobile application. Their goal is to significantly improve the quality of life for COPD patients by addressing both their physical and mental health needs in a comprehensive and engaging digital experience. Our application stands out with its multifaceted features, designed to offer personalized mental health management for COPD. These features are seamlessly integrated with virtual, clinically supported breathing exercises, cognitive behavioral therapy (CBT), and strength training.	5.3

Company name / County	Project Description	# of Employees
Novara Solutions Group LLC (Monmouth County)	Novara Solutions Group is at the forefront of revolutionizing emergency medical care with its groundbreaking innovation, Tele-TQ. This remarkable device seamlessly integrates a GPS call-out system with a biosensor to provide a comprehensive solution for critical situations. At its core, Tele-TQ is an emergency tourniquet designed to effectively stop major bleeding from a victim's extremities. Tele-TQ is an innovative GPS call-out system, which incorporates a cutting-edge biosensor that attaches to the tourniquet. This integration of advanced technologies aims to bridge the gap between the point of injury and hospital care, ultimately increasing the chances of survival for patients in critical situations. The biosensor plays a central role in Tele-TQ's functionality. It remotely monitors vital signs in real-time, including critical metrics such as heart rate, blood pressure, and oxygen saturation levels.	2.3
Oculomotor Technologies Inc.	Oculomotor Technologies (OMT) is developing medical diagnostic software utilizing commercially available virtual reality headsets with integrated eye trackers for diagnosing various vision problems. The vision problems OMT is addressing go beyond one's ability to see clearly. A person could have perfect 20/20 vision and still have numerous other vision dysfunctions. This portable technology has the feasibility to eliminate many of the barriers currently present in providing comprehensive vision care. The portable and interconnected nature of the device allows for virtual examinations that would currently not be feasible with existing methods and technology. The numerous tests included in the system are as follows: Saccadic accuracy, Vergence accuracy, Vestibocular reflux strength, fusional range, visual field test, fixation disparity, Hess Lancaster test, color perception, and smooth pursuits.	3.9
Plumeria Therapeutics Inc.	Plumeria is developing diagnostics for chronic pain. Currently, there are no molecular or biological tests to diagnose pain; thus, patient self-report is the only means, which is highly variable and difficult to reliably quantify, because of individual patient’s subjective feeling at the time of reporting. The diagnostic Plumeria is developing will enable precision medicine for conditions such as neuropathic pain and nervous system malfunctions, including painful diabetic neuropathy (PDN), a debilitating condition for many diabetic patients, osteoarthritis (OA), the most common form of arthritis, rheumatoid arthritis (RA), an autoimmune and inflammatory disease, and multiple sclerosis (MS), a long-lasting chronic disease of the central nervous system. The diagnostic we are developing will have utility for assessing the molecular basis of a common underlying problem for these conditions, especially those involving chronic inflammation.	1.1

Company name / County	Project Description	# of Employees
Serdiuk Industries llc (Atlantic County)	Serdiuk Industries LLC has solidified its position in the specialized technology market catering to Drone/UAV/Air Taxi Launching and Landing Operations on marine vessels. This innovation encompasses a Scalable 6-degree-of-freedom Self-Leveling Flight Deck/Platform, leveraging Inertial Measurement Unit (IMU), accelerometer, and/or gyroscope measurements to counteract roll/pitch/yaw motions of marine vessels during Drone/UAV/Air Taxi and methods of launching and landing operations at sea. This innovation utilizes linear electromagnetism theory to accelerate and launch Group 2 (10-25kg/21-55lbs) and Group 3 (25.1-50kg/56-<1320lbs) UAVs weighing up to 50kg (110lbs) from marine vessel decks not originally configured for air launch operations, all while employing the patented Self-Leveling Flight Deck. This innovative multi-array capability, identified through our research as currently unavailable in the marine-based UAV launch market, is poised to significantly reduce the energy-intensive takeoff phase, providing enhancing operational efficiency for both Military and Commercial UAV operations aboard marine vessels Anticipated benefits include the elimination of energy demands associated with horizontally launched UAVs, leading to enhanced flight range or increased initial cargo load capacity during launch.	1
SNOChip Inc (Middlesex County)	Based on using semiconductor manufacturing tools, SNOChip focuses on developing disruptive optical components and sensors by leveraging innovative metasurface technology. The innovation metasurface technology marks a revolutionary shift in optical component and sensor design. Utilizing nanostructures (small shapes sized and spaced with dimensions smaller than the wavelengths of light being controlled) as constituent building blocks, metasurfaces offer enhanced multi-functionality and miniaturization capabilities.	3.4
TacIton LLC (Monmouth County)	TacIton is a data management platform that automates manual work and increase financial analyst productivity. Our Saas solution automate manual data entry task such as: - Extract tables from PDF to an excel file - Automate the process of finding similar tables and joining two similar tables - Transform excel cell files and data cleansing.	1.6

Company name / County	Project Description	# of Employees
Talon Biomarkers (Morris County)	Flow cytometry is vital in healthcare, drug development, and biomedical research. It assesses cell-associated proteins, determining the quantity of various cell types. Its clinical uses include monitoring CD4+ T-cell counts in HIV patients and diagnosing, classifying, and staging leukemia. For the pharmaceutical industry, flow cytometry is used to evaluate immune responses in cancer and autoimmune diseases. Talon Biomarkers aims to create a software suite for quality control and data visualization in high-parameter cytometry. The suite will include AI-based image classification for quality control, automating a process that is currently manual, subjective, and time-consuming. The visualization tool will present data in novel, easily interpretable patterns, akin to city skylines. The quality control tools will automatically analyze laboratory data, identifying issues with fluorescently-tagged antibodies, reagent aggregates causing data artifacts, and instrument-related errors.	5.1
TLA Innovation, Inc. dba BoomID (Bergen County)	The BoomID SAAS Platform features everything needed to ensure proper authorization, maximize fraud prevention, and facilitate good, healthy user interactions, including: • An exciting and innovative approach to bot protection, to ensure it's a human being and not a bot, synthetic identity, or other form of AI. BoomID's Bot Protection features brand-enhancing challenges, so your users are presented with an engaging and simple means of proving humanity, rather than the frustrating experience of most archaic CAPTCHA-based solutions. • ZEN: The Proof of Humanity, a powerful tool that can determine if it's human or a bot, and whether or not the bot is using stolen credentials, returning them to their rightful owner once discovered. • Advanced biometrics to validate the user, starting with a liveness check, to ensure we're dealing with a real-life human being, with living, breathing vascular tissue. • An AI/ML-based Identity Assurance Engine, which allows the biometric to be recognized independent of the individual's credentials, facilitating a portable identity with a passwordless experience, protecting the privacy of the individual. • A mobile application, featuring a digital wallet and password manager, with an innovating approach to multilateral authorization – dual or multiple approvals on the login and transactional levels.	1.7

Company name / County	Project Description	# of Employees
VINYO (Camden County)	VINYO is a mobile learning and engagement app helping to make wine more approachable, accessible, and inclusive for the next generation of wine lovers. VINYO is a three-sided marketplace that consumers wine newbies, sommeliers, and wineries directly. VINYO offers five capabilities, all underpinned by gamification and AI-based personalization: 1. Lessons & Quizzes: Consumer users utilize flash card style learning, visual aids, and textual content to learn the language of wine. 2. Events: Sommelier and winery users create and market free and paid events for consumer users to register for. 3. Purchase: VINYO streamlines the e-commerce process by allowing Winery users to connect their inventory and enabling consumer users to explore and acquire these wines directly. 4. Tasting Notes: With tasting notes, users can document and share their tasting notes, which include descriptions of the wine color, aroma, and other descriptors of the wine. 5. Community: Consumer, Winery, and Sommelier users can connect, engage in meaningful conversations, seek expert advice, and build connections within the wine community.	2.1
Vital Start Health Inc. (Middlesex County)	Vital Start Health is a University of Pennsylvania startup and has developed the first reproductive and maternity mental health platform (COURAGE) using Virtual Reality for evidence-based care across pre-conception, birthing and postpartum. Our platform empowers moms and mental health practitioners to prevent and treat Perinatal Mood and Anxiety Disorders more effectively, equitably, and quickly. Our patent-pending, VR device agnostic Virtual and Augmented Reality Framework measures and personalizes care throughout the patient journey on-site at a clinic, health system or workplace as well as at home virtually, using native VR or lower-cost Mobile VR. The intervention we are focused on is Stress Inoculation Therapy (SIT) assisted by doulas and mental health clinicians supervised by licensed psychologists for psychotherapy. Our innovation provides a novel approach to disseminate and implement psychosocial interventions and collaboration in a one-on-one setting or in a group across the continuum of care.	1.9
ZSX Medical, LLC (Burlington County)	ZSX Medical is a clinical-stage medical device company developing Zip-stitch®, a breakthrough surgical closure platform with a focus on women's health, designed specifically for closing internal surgical incisions in laparoscopic hysterectomy. Zip-stitch is designed to be simple and intuitive, achieve a superior closure compared to sutures, and save time and money. This technology has been validated by the National Institutes of Health and the National Science Foundation, which have provided funding to develop Zip-stitch in the form of Phase I and Phase II Small Business Innovation Research grants. ZSX's mission is to re-invent surgical wound closure in women's health, increase access to minimally invasive surgical options, and make difficult surgeries easier, freeing surgeons to focus on better outcomes.	3.6

APPENDIX C: Maternal and Infant Health R&D Seed Grant Awardee Company

Name	Description	# of Employees (at the time of application)
AbilityHUB Inc. (Princeton, Mercer County)	A Comprehensive Platform for Social, Behavioral, and Health Data Collection, Communication, and Access AbilityHUB will be at the forefront of transforming care for both the caregiver and care recipient through a groundbreaking social and community care platform.	4.1
AfsarTech Inc.(Rutherford, Bergen County)	AfsarTech is developing pacifiers infused with fluoride to promote better oral health in infants. By introducing a safe and controlled release of fluoride into pacifiers, our objective is to reduce early childhood caries (ECC) and support the healthy growth of baby teeth	1.1
Analytical Diagnostic Solutions INC (Mount Laurel, Burlington County)	In Vitro Diagnostic Solutions (IVDS) is developing the first and only FDA-approved point-of-care (POC) test for determining L-phenylalanine (Phe) levels from a finger or heel-stick sample. The PKU Now system, designed specifically for individuals with phenylketonuria (PKU), consists of three main components: a reflectance-based meter, a mobile application, and a specialized maternal test strip.	5.7
Delphine Diagnostics Inc. (Newark, Essex County)	Delphine Diagnostics is developing a rapid and cost-effective real-time PCR (RT-PCR) test tailored to detect common pathogens associated with sepsis, supported by a provisional covering foundational innovations in sepsis diagnosis.	2.3
Gosia Genomics Inc. (Kearny, Hudson County)	Gosia is developing a groundbreaking Maternal and Prenatal Health Platform designed to revolutionize the way we approach women's health during pregnancy and beyond.	1.5
HeraNano Therapeutics. (Sewell, Gloucester County)	HeraNano is developing innovative lipid nanoparticles (LNPs) to deliver gene therapies to treat life-threatening pregnancy diseases, such as preeclampsia. LNPs are a non-viral drug delivery technology at the forefront of medical innovation, enabling the safe and efficient delivery of therapeutic nucleic acids.	1.6
High Throughput Biology Inc.(Short Hills, Essex County)	HTBio has developed a novel immunoassay that can detect less than 1ng/ml fentanyl in body fluid such as urine in less than 10 minutes. The assay is similar to the sandwich ELISA that has been widely used in clinical diagnosis and biomedical research.	1.7
InteguRx Therapeutics LLC (Califon, Hunterdon County)	InteguRx seeks to further advance the development of a transdermal dosage form designed to deliver the anti-nauseant ondansetron to treat pregnancy-induced nausea and vomiting (PINV).	1.2

Name	Description	# of Employees (at the time of application)
Medifvu, LLC. (Somerset, Somerset County)	Medifvu i-HealthAssist innovation, has 3 key processes: 1. Personalized Treatment Selection Process 2. Personalized Remote Monitoring using AI Chat Bot Real-World Data Analysis Process	1.7
Mycsology Foods (Princeton, Mercer County)	Mycsology Foods is developing a nutrient dense flour enriched for folate via our solid state fermentation platform. The importance of quality nutrition is even higher pre- and post-pregnancy since the demands for certain macronutrients and micronutrients such as iron, folate, and protein are increased.	1.1
NeoGeneStar LLC (Warren, Somerset County)	NeoGeneStar is developing a non-invasive prenatal test (NIPT) for testing RhD status in a fetus using maternal blood during early pregnancy with high specificity and sensitivity for improved diagnostic accuracy. This technology helps clinicians avoid untargeted and unnecessary treatment and ensures the health of pregnant women and their fetuses.	2.3
Neoneur LLC. (Pennington, Mercer County)	Neoneur is developing a unique, patented, neurocognitive assessment tool, easily used during standard NICU care, tracking at-risk infants' development by measuring critical oral feeding coordination skills.	4.8
Neoventech LLC. (North Brunswick, Mercer County)	Neoventech LLC, a specialty pharmaceutical company, has introduced several significant innovations in drug delivery technologies. Their primary innovation is a novel nano-micro encapsulation technology. This proprietary technology enables the creation of new transdermal and topical drug products aimed at addressing difficult-to-treat topical diseases	1.7
PONS (Newark, Essex County)	PONS revolutionizes the efficient collection, processing, and management of large-scale, high-quality medical ultrasound (US) data. Our navigation solution, the first GPS technology for US, enables seamless US data collection by untrained healthcare professionals (nurses, caregivers, pharmacists) from any location (pharmacy, walk-in clinic, at home).	1.7
Primo Pharmatech LLC (Somerset, Somerset County)	Primo proposes to optimize the PRM2207 Oxytocin Formulation, and conduct a pharmacokinetic study to demonstrate proof-of-concept absorption of sublingual oxytocin. The successful development of sublingual PRM2207 Oxytocin Product is be game-changing technology. It will extend the accessibility and shelf life of oxytocin, which is the first-choice medication to prevent and treat Postpartum Hemorrhage (PPH)	2.4
PUMPKIN BABY INC. (Lawrenceville, Mercer County)	PumpKin Baby is developing affordable, in-field diagnostic tools to assess breastmilk nutrition and shelf-life using rapid and easy-to-interpret color-reactive detection strips.	2.6

Name	Description	# of Employees (at the time of application)
QUARKS ADVANTAGE CORP (Jersey City, Hudson County)	This web-based mobile application, powered by artificial intelligence, is designed to address maternal and infant health challenges by providing essential tools and resources during the crucial first two years of life.	3
Ricovr Healthcare Inc. (Princeton, Mercer County)	Ricovr Healthcare is a pioneering, early-stage biotech start-up dedicated to revolutionizing Point-of-Care (POC) and diagnostics. Leveraging a robust foundation in medicine, biochemistry, engineering, and business, our team has developed a groundbreaking platform technology that promises to transform diagnostics	9.9
Smartbody LLC (Teaneck, Bergen County)	The CrossCare Application (“app”) will empower pregnant women and new mothers by using technology to have patients input data related to their daily activities as well as any remote monitoring devices such as glucometers and blood pressure devices.	3.3
Thrivio Health LLC (New Brunswick, Middlesex County)	Thrivio Health is at the cutting edge of healthcare innovation, developing a comprehensive telehealth platform that integrates precision medicine with occupational therapy to enhance maternal and infant health.	3.4
UCHU Biosensors, Inc. (Newark, Essex County)	Lura Heath is developing the world's first salivary diagnostic wearable monitor, which continually and non-invasively tracks health using saliva as opposed to blood or interstitial fluid. The innovative biosensor design is tiny, biocompatible, painless to wear, and self-administered.	4.7
VITRUVIAE INC (Nutley, Essex County)	VTRU100 is a bispecific therapeutic for the treatment of maternal and fetal Cytomegalovirus (CMV). CMV is the #1 infection that causes birth defects in the United States1. The number of infants with disabilities due to congenital CMV (cCMV) infection born each year has been estimated to be 600k2	3.7
Within Health Technologies, LLC. (Hopewell, Mercer County)	Within Health Technologies is developing a first in kind, multi-mode non-invasive vagus nerve and auricular acupressure point stimulator for consumer use at home.	5.2

APPENDIX D: Food and Agriculture R&D Pilot Grant Awardee Company

Name	Description	# of Employees (at the time of application)
AGEless Biotechnologies (Fort Lee, Bergen County)	AGEless Biotechnologies, Inc. is a New Jersey-based biotechnology start-up developing applications for a multi-functional protein modification platform. This platform offers functional improvements to various protein-based products in the biomedical and food sectors.	1.1
Fork & Goode, Inc (Jersey City, Hudson County)	Fork & Good creates cultivated pork by using a patented process that maximizes yield.	19.4
Gather Agriculture, Inc (Jersey City, Hudson County)	Gather Agriculture's mission is to develop food resiliency on farms by building the future of work in agriculture. The company builds simplified robotic tools for farms and farmworkers to increase harvest efficiency and farmworker safety.	2.3
Hydronos Labs LLC (Princeton, Mercer County)	Hydronos Labs is a Princeton-based technology firm developing and providing a key structured data layer for the global weather and climate risk transfer market via its TerraCognos software platform. Hydronos has software products which use the complementary strengths of satellite observations, ground-based sensor networks, computational climate reanalysis, advanced hydrologic modeling and short-term to seasonal weather forecasting.	3.4
Inspired Growing, Inc (Jersey City, Hudson County)	Inspired Growing harnesses cutting-edge indoor vertical farming technology to directly combat food insecurity in New Jersey while fostering healthy eating habits. Their innovative systems enable the cultivation of fresh vegetables year-round, independent of seasonal constraints or weather conditions. .	3.4
Mycsology Foods Inc (Princeton, Mercer County)	Mycsology foods is developing a solid-state fermentation technology platform to produce nutrient-dense, high-protein ingredients. Using this technology, they can unlock previously indigestible and inaccessible nutrients from legumes and grains to create sustainable ingredients and foods.	1.1
Neoventech LLC (Princeton, Mercer County)	By improving pesticide application efficiency, Neoventech's technology ensures more effective pest control, leading to increased crop and fruit yields. This helps farmers in New Jersey produce more food per acre, contributing to overall food availability and reducing the risk of shortages.	1.7

APPENDIX E: Clean Tech Seed Grant - Round 3 Awardee Company

Company Name	Project Description	# of Employees
4.0 Analytics (Essex County)	The company is developing Machine Learning based predictive analytics for use on fleet and consumer vehicles to identify potential vehicle engine and emissions component failures prior to them occurring. This would be offered as a future feature of Mechanic on Board®, 4.0 Analytics' flagship product, which performs remote emissions compliance testing and advanced vehicle engine and emissions components diagnostics.	4
Biodome Inc (Burlington County)	BioDome Inc. is developing sustainable, modular indoor farming units. These structures are approximately 400 square feet and about 10 feet in height, with the ability to grow over 1900 plants and they run on 85% solar energy and collect 100% of water they consume. Our goal is to reduce the overall footprint of the BioDome to about 350 square feet and 8.5 feet tall and improve energy efficiency for computer and heating systems in the unit.	4.1
CargoFish LLC (Union County)	CargoFish is developing an extremely energy-efficient, network capable "capillary" gage "encapsulated" system of "tracks", together with vehicles capable of traversing through said system at speeds averaging 20 - 30 mph and while carrying "containerized parcel", essentially any payload able to fit into a horizontal cylinder of about 7 inches diameter and 22 inches length. Its purpose is to demonstrate, and cause to be implemented, a new utility paradigm for last-mile distribution and delivery of fast-moving consumer goods.	1.3
Energy Research Company (Union County)	The company will demonstrate an instrument that will increase the efficiency of converting renewable biomass feedstocks (i.e. lignocellulosic, MSW) into electricity and/or syngas (e.g. hydrogen) by providing in situ, real-time measurements of elemental composition and higher-order properties such as heating value, ash deformation temperatures, and slagging potential. The sensor uses Laser Induced Breakdown Spectroscopy (LIBS) in which a pulsed laser is focused on a target generating a plasma.	4
Gendell Associates P.A (Hudson County)	Gendell Associates P.A aims to develop a compact pop-up emergency solar power generator, that will be sufficient to power communication equipment, and several small appliances. It will be easy to deploy and retract and compact to transport. The array itself will utilize our proprietary pyramid hinge, and pyramid hinge array technology with modifications. This will provide for extremely light and compact product, yet structurally stable and robust when deployed.	1.1

Company Name	Project Description	# of Employees
Grid Discovery (Essex County)	Grid Discovery is revolutionizing the energy landscape with its cutting-edge SaaS platform. This innovation is specifically tailored to address the challenges associated with microgrid planning and implementation, an application critical for strengthening community energy resilience and promoting sustainable energy practices. At its core, Grid Discovery's innovation lies in its ability to automate and standardize the traditionally complex and time-consuming microgrid planning process. By consolidating vast expertise, data, and advanced simulation tools into one intuitive platform, it empowers energy professionals and stakeholders to effortlessly assess hundreds of potential microgrid projects.	1.4
HiT Nano Inc (Burlington County)	The company is developing a full cell SIB system for use in low-cost electric vehicles (EVs). More specifically, HiT Nano will leverage existing expertise in developing high-rate cathode active materials (CAMs) and SIB CAMs to overcome mass transfer limitations during low temperature and fast charging operations. In this project, HiT Nano will deliver a SIB full cell system which will overcome current LIB limitations, specifically low-cost, fast charging, and superior electrochemical performance at low temperatures by leveraging our novel high-capacity SIB CAM chemistry and small particle stabilization. These novel particles will enable more efficient sodium diffusion and limit capacity losses below freezing in sodium-ion cells.	5.7
Materium Technologies LLC (Union County)	Materium Technologies is focused on material science innovation, harnessing its advanced machine learning techniques to select and optimize manufacturing materials for the solar cell and semiconductor industries. Specializing in analyzing various material properties, Materium's technology focuses on both the development of materials that are used in the manufacturing process and materials and techniques that can extend the lifespan and enhance the performance of existing solar panels and semiconductor devices.	1.9
Oceanomics Inc (Middlesex County)	Oceanomics has developed a suite of metabolite, protein, and DNA-based biomarkers that are diagnostic of thermal stress (one of the biggest threats to ecosystem health and the primary cause of deadly "bleaching") in corals. We are also developing diagnostics for stress and pathogen detection in shellfish which cause significant economic loss to the industry. By developing inexpensive and simple diagnostic devices that target one or a few of the highly specific biomarkers that we have developed (using for example, the same technology as COVID-19 tests) we will provide users with accurate information, which can be easily generated at a large scale, that gives a clear answer to the question of marine ecosystem health.	1.3

Company Name	Project Description	# of Employees
PureLi Inc (Somerset County)	PureLi fills is developing a sustainable and cost-effective extraction technologies for lithium from saline water sources such as Produced Water, brines, and post-processing waste streams. The process exhibits an evaporation rate 15 times higher than current commercial processes, and doubles lithium selectivity. This interfacial crystallization process uses less energy and chemicals compared to competing Direct Lithium Extraction ("DLE") processes, and it has the capability to harvest clean water as well. PureLi has been partnering with Princeton University and major lithium producers to develop scaled reactor systems for field testing, and this grant will specifically allow PureLi to advance the critical capability of semi-continuous salt recovery and crystallizer cleaning.	1.3
Redi Farms LLC (Union County)	Redifarms aims to repurpose underutilized buildings into vertical, hydroponic farms that serve local communities. Our hydroponic growing systems incorporate vertical panels with planting elbows for placing individual plants. The systems are designed to be modular to effectively fit the needs of different layouts and spaces. The systems are created to be simple to operate and maintain. Our prototype farm supplies produce for a farmstand, with future plans for a restaurant, bar, learning kitchen, and event space. Currently we produce leafy greens, herbs, microgreens, and edible flowers, with research underway to determine the best fruiting crops for our systems. In addition to our vertical farming walls ('Vertical Wall'), we are also developing a compact growing system aimed at residential customers and restaurants to allow production of fresh greens and herbs ('Redible Wall').	14.3
RenewCO2 Inc. (Union County)	RenewCO2 has developed a cutting-edge electrocatalytic carbon utilization technology (eCUT) that forms C-C bonds at exceptionally low overpotentials so that the energy requirement is substantially reduced relative to competing technologies. This unique advantage enables CO2 conversion to high-grade monomers and chemicals that are cost-competitive with those prepared by conventional processes, such as monoethylene glycol (MEG), MG, and PG. RenewCO2 plans to manufacture and sell eCUT modules to enable industrial customers to convert their CO2 emissions (CO2e) into a profitable revenue stream.	14
Shutterbug Exchange Inc (Hudson County)	Shutterbug Exchange Inc (SBX) is revolutionizing the solar industry with a groundbreaking mission - revitalizing outdated solar panels through advanced upcycling methods. Committed to breathing new life into outdated solar panels, we significantly reduce landfill waste and cut CO2 emissions. Addressing core inefficiencies and waste challenges, SBX pioneers a transformative path toward a more sustainable future.	1.9

Company Name	Project Description	# of Employees
Singlet02 Therapeutics LLC (Union County)	SingletO2 Therapeutics is developing an innovative, safe, and energy-efficient water disinfection technology for use in aquaculture. The technology generates a reactive form of oxygen gas (called singlet oxygen) that destroys pathogens on contact yet is safe to use because it rapidly decays back to breathable oxygen gas in less than one second. This reactive gas is formed when oxygen molecules contact a photosensitizer (catalyst) in the presence of visible light. A liquid-impermeable superhydrophobic membrane isolates the photosensitizer from the water but allows the reactive gas to enter the flow stream.	1.7
Sunray Scientific Inc (Monmouth County)	ZTACH® ACE is a unique multifunctional material/product that utilizes a magnetic field system during the manufacturing process; successfully developed as a superior alternative to conventional electronic interconnect methodologies such as low temperature solder, wire bonding, etc. ZTACH® ACE processing is lead-free and low energy; facilitates “greener” electronics with clean chemistry, reduced carbon footprint, and does not require additional chemical solvents. Sunray’s goal is to enable domestic manufacturing of electronics by commercializing ZTACH as a sustainable, low-cost solution to enable reshoring electronics manufacturing for the US and New Jersey.	18.7

APPENDIX F: Pilot Clean Tech Demonstration Grant Round 2

Company	Project Description	# of Employees (at time of application)
AIVacua LLC (Basking Ridge, Somerset County)	AIVacua is demonstrating an innovative spray flash distillation technology to be an integrated part of a cost-effective and scalable solution for use in water treatment. This patented technology avoids the high energy consumption and maintenance costs associated with membrane technologies, while providing system mobility and sustained low-pressure, quiet operation.	3
Amatec Inc (Newark, Essex County)	Amatec created an alternative material to cementitious concrete: HDG (high-density gypsum) concrete. It has two major differences from cementitious concrete (the concrete we all know): 1. It cures >80% faster2. Its carbon footprint is ~3 times lower. Thanks to HDG concrete containing zero cement, they are able to eliminate the culprit behind concrete's enormous carbon footprint.	2.6
Bezwada Biomedical (Hillsborough, Somerset County)	Bezwada Biomedical is demonstrating and testing the innovation of proprietary biodegradable polyurethanes developed by the company for use in packaging and consumer product applications to avoid greenhouse gas emissions by diverting the waste from landfills.	5.1
Cecilia Energy, Inc (Newark, Essex County)	Cecilia is demonstrating a modular, microwave-based system that upcycles plastic waste into hydrogen and carbon nanotubes (CNTs). The system addresses plastic waste management, providing three distinct solutions: 1) plastic waste processing, 2) on-site hydrogen production, and 3) production and sale of high-performance carbon materials like CNTs.	4.6
Coulomb Technology, Inc (Somerset, Somerset County)	Coulomb Technology is demonstrating a 5Ah zinc-ion battery for use in energy storage applications. The batteries are patented, based on zinc, MnO2, and sea water, and are safer, faster charging, and half the cost of the incumbent LFP batteries.	5.7

Company	Project Description	# of Employees (at time of application)
EV Edison (Kearny, Hudson County)	EV Edison has achieved full proof of concept for a mobile EV charging platform to deliver mobile EV charging to small, medium, and heavy-duty vehicles The platform will be dispatchable to any location at any time, establishing EV charging sites “on-demand”.	3.4
InnoSepra LLC (Warren, Warren County)	InnoSepra is looking to demonstrate its biogas upgrading technology at a wastewater treatment plant or at a landfill in New Jersey. The technology upgrades raw biogas (~60% methane, hydrogen sulfide, siloxanes) to 92-98% purity methane (dry, no H2S or siloxanes).	4
NanoSepex Inc (Bridgewater, Middlesex County)	NanoSepex is demonstrating innovative membrane technology and process for use in (1) solvent recovery and recycle, (2) biofuel refining and (3) Treatment of aqueous waste streams containing low-concentration solvents and VOCs.	3.7
Pollux Technologies (East Brunswick, Middlesex County)	Pollux is developing a novel filter monitoring technology for use in HVAC systems. The system sends sensor data or post-processed soil parameters to the cloud server via a WiFi or a 5G cellular network with IoT capability. A software program in the cloud server monitors, commands, controls, and communicates with the device.	3.7
PureLi Inc (Franklin Park, Somerset County)	PureLi’s interfacial crystallization process has demonstrated superior performance in extracting lithium from saline water sources, many of which are found in the US, compared to current commercial operations. This extraction process improves the throughput by 60 to 80 times, and our lithium selectivity is double.	12.3
PureNanoTech Inc (Parsippany, Morris County)	PureNanoTech (PNT) is demonstrating a next generation nanobubble technology designed to enhance wastewater treatment processes. This innovation utilizes nanobubbles, which are extremely small air gas bubbles with unique properties, to improve the efficiency and effectiveness of wastewater treatment.	3.1

APPENDIX G: Catalyst R&DVoucher Program Round 2 Companies

BioNanoTech, LLC (Titusville, Mercer County, 6 Employees): BioNanoTech was founded to open up new pathways to the innovation and production of novel protein/antibody-based targets for next-generation cures and beyond. The company has developed a protein/antibody purification platform technology. They wish to characterize and verify its performance and use cases in drug discovery.

Delphine Diagnostics, Inc (Newark, Essex County, 2.3 Employees): Delphine Diagnostics Inc is developing diagnostic products to speed up diagnosis and help guide effective treatment decisions in patients suspected of or suffering from infectious diseases. Delphine's current research interests are directed at sepsis, and Delphine's objective is to design and develop a pathogen-based, real-time polymerase chain reaction (rt-PCR) Sepsis Diagnostic Kit.

Favorite Pharmaceuticals, Inc. (Edison, Middlesex County, 1 Employee): Favorite Pharmaceuticals develops compounds that have properties suitable for use as anticancer agents. They are focused on improving their initial compounds by exploring the linker, fatty chain and other metabolite-like component with another crowding agent.

Fuceltech Inc. DBA Princeton Innotech (Princeton Junction, Mercer County, 8 Employees): The company is developing a special type of laser for atomic and quantum sensors including quantum computing applications. Applications include atomic sensing for delivering ultra-high precision for atomic clocks and high sensitivity magnetometers to replace conventional GPS navigation and Qubits for quantum computers.

NeoGeneStar LLC (Somerset, Somerset County, 2.3 Employees): The company is developing a non-invasive prenatal test (NIPT) for RhD status in a fetus. The company has a patented novel purification method for isolating cell-free DNA from the mother to test the baby. The NeoGeneStar method for the purification of larger blood samples enables earlier test results and a significant reduction in failed testing.

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Novara Solutions Group LLC (Freehold, Monmouth County, 2.3 Employees): Novara Solutions Group is developing a device called Tele-TQ, an emergency tourniquet with an integrated GPS call-out system and biosensor. This innovation combines remote vital sign monitoring and GPS tracking, enhancing the chances of survival in critical situations. Vital signs are continuously monitored and transmitted to medical professionals, allowing for informed treatment decisions enroute to the hospital. GPS technology ensures accurate patient location tracking, particularly crucial in challenging environments.

NP Pharmaceuticals, LLC (Belle Mead, Somerset County, 1.3 Employees): NP Pharmaceuticals is engaged in research to identify functional biomarkers triggered by the inactivation of therapeutic target(s). These functional biomarkers will be used to confirm target interaction of new therapies and allow the structure activity relationship (SAR) analysis required to optimize and advance therapeutics to approved drugs.

Tora Chai, LLC (Hillsborough, Somerset County, 1.7 Employees): Tora Chai is embarking on a Research and Development project focused on the creation of a new Chai Concentrate utilizing natural extracts as opposed to raw ingredients. This initiative involves an in-depth exploration of consumer and market trends. They also focus on extending their product line beyond the established Classic Concentrate to include formulating unique flavors, with a specific emphasis on developing Ginger and Turmeric tea concentrates.

Zena Therapeutics Inc. (North Brunswick, Middlesex County, 2.3 Employees): Zena Therapeutics is designing mental health medications with common modes of misuse in mind — especially concomitant usage (mixing of medications) that may lead to overdose. Their current target is the alleviation of acute anxiety with the added safety benefits of no fatal withdrawal symptoms and no fatal respiratory depression if co-used with alcohol and/or opiates/opioids.

Digicare Realized, Inc (Old Bridge, Middlesex County, 1.6 Employees): The company is an emerging AI-technology firm commercializing evidence-based solutions to modernize care for complex brain diseases through decision intelligence in early detection and care management. Their initial focus is on Alzheimer's disease and related dimentias (ADRD) where they seek to realize equitable, accessible, and patient-centered care.

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E-Sentience, Inc. (Newark, Essex County, 5.7 Employees): The company is an early-stage VC-backed tech company making electrochemical sensors to measure a variety of endogenous and exogenous chemical threats in real-time.

Flow Faerie Co (Jersey City, Hudson County, 1 Employee): The company is developing a reusable menstrual cup to revolutionize menstrual health with a beginner-friendly, hygienic solution. Their reusable menstrual cup is crafted from 100% medical grade silicone and features a pioneering applicator.

General Autonomy (Piscataway, Middlesex County, 2.1 Employees): The company is specializing in the development of innovative safety and security solutions for autonomous vehicles (AV) and robotics. With a focus on the rapidly expanding field of connected and autonomous vehicle (CAV) technology, the company's mission is to enhance the safety assessment processes crucial to the success of AV and robotics industries.

High Throughput Biology Inc (Short Hills, Essex County, 2 Employees): The company has made significant progress on developing and validating a novel multiplex immunoassay to detect controlled substances such as fentanyl, oxycodone, and methamphetamine in postmortem toxicology analysis. Once fully validated, a desktop device that implements the immunoassay will be developed and deployed so that comprehensive toxicology analysis can be completed within days instead of 3-9 months at much lower cost.

Lactiga US Inc (North Brunswick, Middlesex County, 1.5 Employees): Lactiga is d biotherapeutics company developing novel biologics to treat and prevent infections with a focus on improving the quality of life in patients with Primary Immunodeficiency Diseases. They are also unlocking the full therapeutic value of human milk to create the next generation of anti-infectives that can battle dangerous pathogens.

Mendham Mushrooms LLC (Morristown, Morris County, 1.1 Employees): Mendham Mushrooms grows 22 varieties of edible mushrooms under the canopy of hardwood trees, for human health and the health of the forest.Mendham Mushrooms is studying the endophytic and Rhizosphere biome constituents of healthy NJ Native Keystone Hardwood trees using metagenomic testing of samples. The data collected will provide a framework to recreate optimal growing conditions for agroforestry techniques in the production of edible culinary and functional mushrooms in New Jersey.

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Nanotech Pharma Inc (Hillsborough, Somerset County, 16 Employees): The company is a specialty drug delivery company dedicated on nanomedicine development of biological and small molecules that deploy our proprietary drug delivery.

Native State Therapeutics (Scotch Plains, Union County, 1.6 Employees): The company is developing therapeutic drugs for use in humans. The purpose of these drugs would be to interfere with the steps associated with the progression of various neurodegenerative diseases that can also be characterized as protein misfolding diseases, such as Alzheimer's Disease, Parkinson's Disease and others.

Orka Bar (Wall, Monmouth County, 1.4 Employees): The company is developing Orka Bars, a cold and creamy, high protein, low carb, low sugar, and gluten free protein bar made from egg whites. Orka Bars resemble the nostalgic Klondike Bar but is differentiated from traditional frozen treats in key nutritional ways. Each bar is packed with 15g of protein. Orka Bars are the first product of its kind made from egg whites in its category.

Pumpkin Baby, Inc. (Lawrenceville, Mercer County, 2.3 Employees): The company is developing a new kind of all-natural, infant-safe product that moms can add to their pumped breast milk to keep it fresh and nutritious whenever it's stored. They are also creating new diagnostic tools that enable professionals to test the nutritional quality of breast milk in a more rapid way.

Quixgen Inc (North Brunswick, Middlesex County, 1.7 Employees): The company is currently developing a patented chemical compound in mid or large scale and formulations for the compound into a proto-typed topical drug. They are working to synthesize the compound.

Thuja LLC (Mount Laurel, Burlington County, 1.9 Employees): The company is a next-generation survey platform that elevates data collection beyond text, introducing a proprietary blockchain framework and new AI algorithm for more rich and secure data. It solves the problem of data breaches and poor data quality that traditional survey platforms face.

Within Health Technologies (Hopewell, Mercer County, 5.4 Employees): The company is developing a non-invasive, low-current, transcranial electrical stimulation technology (tCES) that accesses the endorphinergic and serotonergic pathways of the deep-brain using a sophisticated 'interference' current.

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Vital Foods and Beverages LLC (Hackensack, Bergen County, 1.4 Employees): Vital Foods and Beverages is focused on scaling and commercializing an herbal craft beer, incorporating a blend of herbs and fruit in the formulation. They are dedicated to guiding the herbal craft beer from the developmental phase toward successful market introduction, addressing critical aspects such as product viability, stability, packaging, processing, and shelf-life considerations.

Aersys, Inc (Edison, Middlesex County, 2.3 Employees): The company is currently developing a modular robotic storage and retrieval system that lets retailers automate their warehouses, microfulfillment centers, stockrooms, and curbside pickup facilities with a standardized, integrated solution. Their storage and retrieval system, the AerNode, uses gantry-based and agent-based robots to move packages around the system and transfer them to and from humans and autonomous vehicles.

AGEless Biotechnologies, Inc. (Fort Lee, Bergen County, 1.1 Employees): The company is developing a chemical modification technology for improving protein-based products, including biomedical, research, and consumer products. The technology was originally conceived to provide resistance to a deleterious physiological biochemistry called glycation for bioprosthetic heart valves. The technology is also useful for reducing glycation in various other collagen-based materials.

Apinovo Pharma Innovations Inc (Union, Union County, 1 Employee): The company is developing innovative process chemistries for high value drugs to catalyze a renaissance in active pharmaceutical ingredient synthesis & manufacturing.

Automated Education, LLC. (Piscataway, Middlesex County, 1.7 Employees): Automated Education will be conduction research & development directed towards patented technology for the Automated Incubator; The automatic incubator will be used for analyzing chemical properties of items placed in a Petrie dish. The design is derived from the initial patent D385919 for an Automated Educational Device. The company is developing a prototype.

Boneforger Holding Company (Jersey City, Hudson County, 1.1 Employees): The company is conducting an animal study on rabbits to test their Orthopedic implant suite for fracture fixation and manufacturing.

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EValuate Diagnostics, Inc. (Nutley, Essex County, 1.6 Employees): The company is conducting side-by-side comparisons of their current antibody activation process to the one provided by SiteClickTM and will quantify its benefits by initially conducting Western blot analyses of the activated antibodies.

ImmuNovX Biotech (Marlton, Burlington County, 1.3 Employees): The company is developing a platform technology that generates live-attenuated, replication-defective DNA pathogens for vaccines. The R&D activity will be the synthesis of the chemical Centanamycin, which is needed to continue to develop the technology.

Kathera Bioscience Inc (Union, Union County, 4.4 Employees): The company is conducting research and development to further evaluate antifungal compounds. The assays include i) mammalian cytotoxicity, ii) mammalian red blood cell lysis; iii) expanded antifungal activity minimal inhibitory concentration (MIC) testing using additional fungal pathogens and iv) development of specific biochemical and biophysical assays measuring fungal and mammalian target inhibition.

NanoInk Imaging, Inc. (Basking Ridge, Somerset County, 2.6 Employees): The company is developing an imaging technology with applications in drug discovery and surgery. A key part of this technology is ceramic nanoparticles that emit light in the Short-Wave Infrared (SWIR) range when excited by a laser.

Nanonex Corporation (Monmouth Junction, Middlesex County, 1.7 Employees): Nanonex is developing innovative nanoimprint lithography processes which allows multiple levels of nanoscale patterns to be defined and aligned. The advanced method would open doors for a variety of applications, including semiconductor and optics.

Nemagen Discoveries, Inc (Princeton, Mercer County, 2.3 Employees): NemaGen Discoveries is a preclinical phase biotechnology company that is developing therapeutics for allergic disorders and pulmonary fibrosis. NemaGen has identified that carbonic anhydrase 1 (Car1) is a key enzyme expressed by mast cell precursor cells, and its inhibition diminishes mast cell development. Recently, NemaGen has identified a Car1 inhibitor lead that meets oral bioavailability criteria.

APPENDIX G: Catalyst R&DVoucher Program Round 2 Companies

Neoventech LLC (North Brunswick, Middlesex County, 1.7 Employees): The company is focused on the characterization of formulations containing new microencapsulation vesicles or materials. They are conducting multiple product manufacturing process development studies for encapsulation products. Different manufacturing parameters will be studied as experimental variables and the product characteristics and performance such as encapsulation efficacies, particle size, surface properties, product morphology, rheology, mechanic properties will be studied as outcomes

NeuroTechR3 Inc. (Warren, Somerset County, 4.2 Employees): NeuroTechR3 has developed R3THA, a comprehensive rehabilitation system that focuses on hand and arm recovery. It's designed to be easy to use, portable, and affordable, making rehabilitation more accessible to those who need it. They are conduction research and development to improve R3THA's assistive devices such as arm supports, related to the ergonomics and human factors, for individuals with stroke and children with Cerebral Palsy.

Nexomics Biosciences DBA Nexomics Inc (Rocky Hill Borough, Somerset County, 5.93 Employees): Nexomics is developing a methodology to study protein dynamics, protein folding, protein-protein interactions, and protein-small molecule interactions. Nexomics specifically focuses on using HDX-MS in examining protein and small molecule interactions.

Optimeos Life Sciences, Inc (Princeton, Mercer County, 7.7 Employees): Optimeos has developed Coated Inverse Nanocarriers (CINCs) to overcome the limitations of lipid nanoparticles (LNPs) for mRNA and DNA delivery.

Plexymer, Inc. (Plainfield, Union County, 1.3 Employees): Plexymer aims to use robotics guided by artificial intelligence / machine learning (AI/ML) to optimize the design of novel polymer excipients for life science enzyme reagents with enhanced stability over a range of temperatures for ambient shipping. This data-driven paradigm will allow the company to robustly identify highly durable formulations for ambient shipping of sensitive enzyme reagents.

Prima Innovations, LLC (Wayne, Passaic County, 1.1 Employees): Prima Innovations focuses on PI-111, a topical muscle relaxant with applications that directly target muscle spasms, relieving the associated pain and discomfort without the side-effects seen with currently available oral meds.

APPENDIX G: Catalyst R&DVoucher Program Round 2 Companies

Primo Pharmatech LLC. (Somerset, Somerset County, 2 Employees): The company is an emerging specialty drug delivery technology company that develops novel drug delivery systems for major pharmaceutical areas. The company focuses on the sublingual delivery systems and creates solutions to deliver drugs in a fast and efficient way.

Ricovr Healthcare Inc. (Princeton, Mercer County, 6.9 Employees): Ricovr is developing a point-of-care (POC) test for detecting THC in saliva for determination of recent cannabis use. This test employs a novel Plasmonic fiber-optic absorbance biosensor (P-FAB) and gold nanoparticles conjugated to anti-THC antibody (Ab-AuNP) to perform a rapid competitive immunoassay.

Sabra Medical Corporation (Westfield Town, Union County, 1.1 Employees): Sabra Medical is developing a device that will allow clinicians to confirm that an intraosseous IO) catheter has been correctly placed. This device will make it quick and easy for a clinician to ensure the catheter was correctly positioned and to be able to use it with confidence over the course of the catheter's dwell time by displaying the pressure waveform that is directly measured from the intraosseous space.

Shams Consulting LLC (Lawrenceville, Mercer County, 1 Employee): Shams Consulting has identified a chemical scaffold that shows promise as a novel glutamate inhibitor for the treatment of epilepsy. The chemical scaffold is represented by a specific and novel molecule with significant glutamate inhibition in an electrophysiologic model commonly known as patch clamp test and would serve a starting point for medicinal chemistry. Shams intends to leverage structure-activity relationship (SAR)-led medicinal chemistry and mechanism-agnostic phenotypic screening to develop a lead compound with activity against glutamate receptors.

Turtle OncoPharma (Branchburg, Somerset County, 1.1 Employees): Turtle OncoPharma (TOP) is developing lung cancer treatment using a localized and sustained drug delivery system. The system reduces the need for extensive surgeries and provides more comprehensive tumor control. The system has minimal toxicity to other organs, consistent release over 30 to 60 days, and effective absorption into regional lymph nodes.

Vasade Biosciences Inc. (Barnegat Light, Ocean County, 1.3 Employees): Vasade Biosciences is developing a specific pharmacological inhibitor of Adenylyl Cyclase Type 5. It will be used in life sciences to enhance exercise capacity and protect against obesity, diabetes and myocardial ischemia and heart failure.

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Vital Start Health Inc (Princeton, Mercer County, 1.7 Employees): The company is conducting a feasibility study looking at the use of Virtual Stress Inoculation Therapy on the treatment of maternal anxiety and stress. Virtual Stress Inoculation Training (vSIT) will be delivered to expecting mothers using Vital Start Health's COURAGE (COntinUum based extended Reality Assisted coGnitive behavior therapy with Experiential practice) platform.

Discogen LLC (Harrington Park, Bergen County, 1.1 Employees): The company is developing a noninvasive technology for the treatment of spinal disc degeneration.

Endomedix, Inc. (Montclair, Essex County, 5.7 Employees): Endomedix is a pre-clinical MedTech venture located in Montclair, New Jersey. The Company's PLEXimine™ novel chemistry platform can be tuned to produce 5 separate biosurgery product groups, each with very different characteristics. This versatile technology can be used to produce biosurgical devices that solve problems that can't be addressed by the legacy devices. Its PLEXimine™ technology uses starting materials with a history of use in FDA-regulated products and imparts to them unique features and characteristics. Its lead product, PlexiClot™ Absorbable Hemostat, is fast acting and eliminates through technology the risk of paralysis and reoperation due to device swelling, a common problem in all current absorbable hemostats.

K&J Design (Carteret, Middlesex County, 2 Employees): The company is developing the UV Drink Locker, a self-sanitizing unit designed for installation in public restrooms. It is a seamless integration that utilizes UV technology to kill a vast majority of germs and bacteria, including E. coli, salmonella, MRSA, and many others that are common in such settings. The activation is hands-free, initiated by a simple hand wave, ensuring minimal contact and maximum hygiene. The product represents not just a tool for cleanliness but a stride towards health-conscious living in public spaces.

APPENDIX H: Clean Tech R&D Voucher Round 3 Company

Coulomb Technology Inc (Somerset, Somerset County, 5.7 Employees): The company is developing rechargeable Zinc-MnO2 cells in the USA. They focus on the E-mobility and Energy-Storage (ESS) markets.

Geogreens LLC (Chesilhurst, Camden County, 2 Employees): GeoGreens is an indoor hydroponics farm located in Hamilton, NJ, Mill One Building. They grow fresh, local produce all year round serving the tristate area. Because they are an indoor farm, they are not subjected to the effects of climate seasonality. The company's mission is to become as close to a zero waste farm as they can.

Globewater & Solar Technologies (Hopewell, Mercer County, 1.14 Employees): The company creates a water resiliency action plan in advance of any crisis so their clients can focus on other recovery efforts. They act as consultants, developers, ad integrators of smart solar water pumping systems.

Kaizen Secure Voiz LLC (Edison, Middlesex County, 1.14 Employees): Kaizen Voiz is a leading-edge innovator in voice biometric authentication technology. The company has a patented and certified authentication engine integrated with voice analysis. It allows for authentication based on AI (Artificial Intelligence) technology and vocal tract characteristics to prevent fraudulent activities.

Phenegra Corporation (Scotch Plains, Union County, 1.71 Employees): The company focuses on how the various components of asphalt concrete and their relative compositions (volumetrics) impact field performance. Identifying new and innovative materials that have been added in asphalt concrete to make an impact on performance, and how they can be cost effectively deployed in targeted "hotspots" areas is of particular interest for the company.

Princeton NuEnergy Inc. (Bordentown, Burlington County, 24.2 Employees): Lithium-ion batteries (LIBs) have been widely used in portable electronic devices and will have revolutionary prospects for application in electric vehicles (EVs). In order to cut LIB costs from their current $150/kWh to <$80/kWh, an array of cathode technological innovations and process integrations will be required. Currently cathode synthesis process is a multi-step, slow, energy intensive process, which is not cost effective. PNE's low-cost cathode production process can eliminate the conventional calcination step, resulting in a time/energy-effective process. The produced cathodes will increase the energy density and cycling stability of LIBs, reduce chemical footprint and fire propensity and energy/water consumptions.

APPENDIX H: Clean Tech R&D Voucher Round 3 Company

Amatec Inc (Newark, Essex County, 5.7 Employees): The company is developing fundamentals for high-density gypsum technology. Their high-density gypsum (HDG), produces many types of gypsum composites (gypsum-based concretes). Their research and development is focused on substituting concrete with gypsum.

Aspire Solutions LLC (Edison, Middlesex County, 2.4 Employees): The company is developing an advanced chemical recycling technology, designed for the processing of plastic waste. This technology will convert plastic waste back into its fundamental components and liquid feedstock via a sophisticated depolymerization process. This method specifically recovers the hydrocarbon component from selected plastic waste residues through thermolysis.

AtoMe Inc. (Bound Brook, Somerset County, 2.9 Employees): AtoMe is developing enhanced metal alloys for 3D printing. These materials are intended to improve the reliability of printed parts and to achieve significant increases in maximum operation temperature and wear resistance. Such improvements will increase feasible structural applications of metal printing.

BioDome Inc.. (Mount Laurel, Burlington County, 4.4 Employees): Biodome offers produce-as-a-service through self-sustaining, urban farming indoor farms. They are focusing their research and development activities on increasing the efficiency of their plant growth algorithms and incorporating AI into their growing processes. Additionally, they are conducting wind load testing to increase the efficiency of energy consumption in the BioDome unit.

Cecilia Energy Inc (Newark, Essex County, 4.6 Employees): The company is developing a novel solution for thermochemical degradation of waste plastic to hydrogen gas and solid carbon nanotubes. Their microwave-assisted reactor unit is currently bench-scale and the company is actively doing R&D and design for a scaled-up pilot reactor unit. They are operating various sized cold-flow reactors in addition to their heated reaction chamber.

Oceanomics Inc (New Brunswick, Middlesex County, 1.1 Employees): The company is developing a suite of metabolite, protein, and DNA-based biomarkers that are diagnostic of thermal stress (one of the biggest threats to ecosystem health and the primary cause of deadly “bleaching”) in corals.

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Orbital Materials Inc (Monmouth Junction, Middlesex County, 9.2 Employees): Orbital Materials is developing a novel sorbent for direct air capture (DAC). At the heart of Orbital Materials' approach lies "LINUS," an AI model that can be used to design novel materials such as solid sorbents optimized for DAC (e.g. C02/H20 selectivity, etc). They are in the process of understanding R&D to validate the AI model experimentally and developing their first set of candidate materials for DAC.

Pathak Technologies DBA Ptech (Titusville, Mercer County, 1.1 Employees): PTech is attempting to commercialize and find partners for a NANOFILM technology. This technology comprises of a central fiber as a base structure, a proprietary nanotechnology formulation dispersed in a solvent (which the fiber is dipped into), and an adhesive that binds the nanofilm to a desired substrate. This technology has potential applications in heat shielding for space crafts, battery encapsulation in EVs, compact electronics for heat dissipation, and more.

Pollux Technologies LLC (Piscataway, Middlesex County, 3.1 Employees): The company is developing an accurate air filter monitoring technology using optical sensors based on two issued US patents, 10,864,471 and 11,235,272. The technology will contribute to reducing waste, energy efficiency, and cleaning the environment.

PolyGone Systems Inc (Princeton, Mercr County, 4.3 Employees): Polygon's technology development focuses on manufacturing a customized floating frame customized for analyzing collected microplastic samples.

RenewCO2 Inc. (Cranford, Union County, 14 Employees): The company is scaling up an electrocatalytic carbon utilization technology (eCUT) that enables a one-step low-temperature conversion of CO2 into carbon-negative chemicals. The eCUT platform operates at the high energy efficiency required to compete in cost with conventional petrochemical processes in the marketplace.

SunRay Scientific Inc. (Eatontown, Monmouth County, 19 Employees): Sunray Scientific offers custom engineered interconnect solutions for advanced electronic packaging. SunRay's patented ZTACH® ACE electronically conductive epoxy system delivers miniaturization and improved throughput utilizing existing manufacturing infrastructure. The company will focus their research and development activities on the analysis of samples bonded with ZTACH® ACE as well as other materials in SunRay's portfolio. This will allow the company to better understand the behavior of the material at various process conditions.

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Swind Power LLC (Princeton Junction, Mercer County, 2.4 Employees): The company is focusing on developing a new innovative concept of Vertical Axis Turbine (VAT). The unique part of this concept is control over the horizontal blades divided by two (payer of blades). This allows one of the blades to exert all available kinetic energy from the fluid and the opposite blade to return against the fluid with minimum resistance and control orientation of the driving blade.

Materium Technologies LLC (Summit, Union County, 1.71 Employees): Materium Technologies is rapidly evolving and growing, refining our advanced machine learning models to optimize material selection for clean energy applications.

Still Bright, Inc (Newark, Essex County, 7.17 Employees): The company is powering a faster, cleaner, and more abundant copper supply.

PineGem Technologies LLC (Short Hills, Essex County, 3 Employees) $40,000: Smart Lawn Mower (SLM) is a novel autonomous lawn mower integrating accurate positioning and imaging processing to mow grass with zero emissions. SLM's value proposition includes its ability to: • Operate with minimal noise, preserving the serenity of neighborhoods, especially in suburban areas. • Utilize nonGPS novel tech, easy setup from a smartphone application. • Mow longer and be charged faster. • Be cost-competitive. As it navigates through the early stages of technology prototyping the Voucher grant will enable SLM to create positive economic and environmental impact in lawncare industry. Simultaneously, it lays the groundwork for novel local navigation technology to unlock opportunities for future applications.

APPENDIX I: SBIR/STTR Round 5 Company

Direct Funding:

Ricovr Healthcare Inc (Princeton, Mercer County, 9.1 Employees): The company is the creator of the XALIVA® rapid diagnostics platform that provides high-quality, cost-effective, and rapid results for employers using only a small amount of saliva. The testing platform leverages the first truly portable nanoparticle detection technology, allowing for fast, non-invasive point-of-care diagnostics. With the collaboration of industry experts, the company's platform is versatile and expanding into new point-of-care diagnostics beyond drug testing, such as infectious disease, maternal health, and cancer detection applications.

Singlet O2 Therapeutics (Newark, Essex County, 1.6 Employees): The company is developing a breakthrough treatment for periodontal disease. Our therapy, harnessing the bacteria-killing capability of singlet oxygen, will treat advanced stages of the disease without surgery.

Afsartech Inc. (Rutherford, Bergen County, 1.1 Employees): AfsarTech specializes in the engineering of cutting-edge dental biomaterials designed for use as expandable dental sealers. They are committed to revolutionizing its advanced and expandable biomaterials.

Fria LLC (Avenel, Middlesex County, 2.3 Employees): The company is focused on the development of a wearable cooling device that successfully mitigates the effects of vasomotor symptoms (i.e., hot flashes) primarily affecting menopausal women.They expect that the integration of augmented, passive, nano-thermal cooling technology within a wearable application (i.e., jewelry) will reduce and relieve the discomfort of spontaneous acute overheating.

NemaGen Discoveries Inc (Princeton, Mercer County, 2.3 Employees): NemaGen Discoveries is a biotechnology company that is advancing first-in-class therapeutics for patients suffering from severe allergic disorders and pulmonary fibrosis.

Neonenur LLC (Pennington, Mercer County, 3.9 Employees): Neoneur is developing a patented, neurocognitive assessment tool to track at-risk infants' development by measuring critical oral feeding coordination skills. When clinically available, the toll will assess oral feeding capabilities, an AAP acknowledged critical skill required for NICU discharge.

APPENDIX I: SBIR/STTR Round 5 Company

Neonenur LLC (Pennington, Mercer County, 3.9 Employees): Neoneur is developing a patented, neurocognitive assessment tool to track at-risk infants' development by measuring critical oral feeding coordination skills. When clinically available, the toll will assess oral feeding capabilities, an AAP acknowledged critical skill required for NICU discharge.

Atux Iskay Group LLC (Plainsboro, Middlesex County, 2.3 Employees): Atux Iskay Group LLC is a pre-clinical-stage company targeting the tumor suppressor PP2A and is developing small molecule therapeutics to treat cancer, inflammation, and neurodegenerative diseases.

Gendell Associates DBA Folditure (Hoboken, Hudson County, 1.1 Employees): The company is focused on the implementation of their proprietary Pyramid Hinge array design, combined with novel linear extension mechanisms, as a solution for a 50 kW re-deployable Lunar Surface Solar Array.

High Throughput Biology Inc (Summit City, Union County, 1.1 Employees): High Throughput Biology Inc. proposes to develop an array-based multiplex immunoassay for postmortem toxicology screening. The technology can deliver semi-quantitative results in less than 60 minutes with whole blood on all drugs listed in the 2021 ANSI/ASB Standard for the Analytical Scope and Sensitivity of Forensic Toxicological Testing.

HiT Nano, Inc (Bordentown, Burlington County, 5.7 Employees): HiT Nano manufactures advanced cathode materials for lithium-ion and sodium-ion batteries, using patented manufacturing processes which reduce production time, cost, energy consumption and environmental impact compared to conventional production methods.

Kathera Bioscience Inc (Union, Union County, 2.5 Employees): Kathera Bioscience, Inc. is a biotech startup company developing broad spectrum small molecule antifungal drugs against new enzyme targets for which there are not currently FDA or EMA approved drugs. The company currently has two antifungal programs in different stages of preclinical Research & Development (R&D).

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Molecular Surface Technologies LLC (Oceanport, Monmouth County, 2.3 Employees): Molecular Surface Technologies is a science and technology company dedicated to developing and licensing/selling its technologies to companies who manufacturer/distribute end products. They invent, refine and provide a final surface modification strategy for specific products to meet development partner company's needs.

Novopedics, Inc (Princeton, Mercer County 3.6 Employees): NovoPedics is a medical device start-up company developing MeniscoFix™, a single use medical device intended to be implanted via arthroscopically assisted surgery to replace the entire medial or lateral meniscus of the knee. MeniscoFix™ is a bioresorbable device designed to mimic the architecture and biomechanical properties of the native meniscus, serve as a load sharing device following implantation, and gradually resorb and support development of functional neo-meniscus tissue.

Pollux Technologies LLC East Brunswick, Middlesex County, 2.9 Employees): Pollux Technologies is an early-stage startup developing an accurate air filter monitoring technology using optical sensors based on two issued US patents.The technology will contribute to reducing waste and cleaning the environment. Their IoT-enabled HVAC filter monitoring system aims to integrate seamlessly into the emerging digital building platforms.

Portable Diagnostic Systems Inc (Newark, Essex County 5.3 Employees): Portable Diagnostic Systems Inc. is developing a next-generation microfluidics-based drug screening tool called the Integrity-1 Analysis System. The Integrity-1 Analysis System detects low abundance targets of oral fluid with high accuracy and precision. When fully developed, the system will offer a more comprehensive drug screening, and analytical characterization closer to laboratory-based instrumentation.

Portable Diagnostic Systems Inc (Newark, Essex County 5.3 Employees): Portable Diagnostic Systems is a veteran-owned biotech startup developing an innovative drug testing platform called the Integrity-1 Analysis System. This system has potential to provide lab-quality analytics in a compact platform that can be operated at the point-of-need, outside of the laboratory environment. The overarching goal is to establish the feasibility of the Integrity-1 Analysis System for postmortem analysis cause of death investigation. The aim is to perform accurate and highly multiplexed analysis in whole blood for postmortem analysis.

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Stardust Labs Inc (Colonia, Middlesex County, 1.1 Employees): Stardust Labs is developing new form of Cryptography techniques for financial applications. These techniques serve to keep users safe as they perform transactions in distributed financial systems.

Zena Therapeutics Inc. (North Brunswick, Middlesex County, 2.3 Employees): Currently the work at Zena Therapeutics focuses on acute anxiolytic compounds that do not increase the risk of overdose if taken concomitantly with other central nervous system depressing substances such as opioids and alcohol. Preliminary studies show favorable pharmacokinetics, robust anxiolytic activity (in rats) and favorable safety characteristics.

ZSX Medical, LLC (Moorestown, Burlington County, 3.6 Employees): ZSX Medical, LLC, is a clinical-stage medical device company developing Zip-stitch, a breakthrough surgical closure platform designed specifically for closing internal surgical incisions, with a focus on women's health.

Bridge Funding:

NemaGen Discoveries Inc (Princeton, Mercer County, 2.3 Employees): NemaGen Discoveries is a biotechnology company that is advancing first-in-class therapeutics for patients suffering from severe allergic disorders and pulmonary fibrosis.

Cecilia Energy, Inc. (Newark, Essex County, 4.6 Employees): Cecilia Energy is addressing the plastic waste problem by commercializing a distributed, modular microwave-based system that upcycles plastic waste into hydrogen and carbon nanotubes. This powered-by-electricity process is energy-efficient and can achieve a carbon-neutral profile when coupled with renewable electrification of the grid. It produces high-performance, high-value additives like carbon nanotubes at a fraction of the cost.

NeuroTechR3 Inc. (Warren, Somerset County, 4.6 Employees): NeuroTechR3 is focused on improving neurological health by developing evidence-based technology assisted rehabilitation solutions designed for individuals recovering from chronic brain injury affecting upper extremity function.

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SNOChip Inc. (Plainsboro, Middlesex County, 3.6 Employees): SnoChip designs and makes metasurface nano-optics to address demands for smaller, lighter, more powerful, and affordable photonics devices. SNOChip's technology provides an innovative solution to device integration and miniaturization by overcoming the technical challenge that is beyond the conventional optics. It enables the manufacturing of nano-optics by using semiconductors for the fabrication process.

Fria, Inc (Avenel, Middlesex County, 1.4 Employees): Fria Inc. is a revolutionizing, fem-tech innovation that creates wearable cooling accessories to alleviate the discomfort of hot flashes and overheating.

Pollux Technologies, LLC (Piscataway, Middlesex County, 3.971 Employees): Pollux Technologies (D/B/A Lumiaq) located at 35 Berrue Circle, Piscataway, NJ 08854 is an early-stage startup company developing accurate air filter monitoring technology using optical sensors based on two issued US patents (10,864,471 and 11,235,272). The technology will contribute to reducing waste and cleaning the environment.

Haylon Technologies, Inc. (Iselin, Middlesex County, 3.4 Employees): Haylon Technologies is developing an innovating battery circuit technology that enables energy storage system designers to strategically leverage complementary types of rechargeable batteries. This approach can result in significant performance improvements to mobility, aerospace, and stationary energy storage batteries.

MetaRE, Inc. (Fort Lee, Bergen County, 1.1 Employees): The company specializes in the development and manufacturing of a wide range of bio-inspired nano-photonics materials for a diversity of applications, ranging from radiative cooling materials to metasurface devices.

Misram LLC (Holmdel, Monmouth County, 2.3 Employees): Misram LLC is engaged in dual-use AI R&D and product development targeting public safety, DoD, and commercial customers.

Plumeria Therapeutics Inc (Union, Union County 1.1 Employees): Plumeria is developing a non-opioid pain drug, which has been evaluated in several Phase II trials demonstrating safety and tolerability. Plumeria has identified a biomarker and will use this info to set inclusion criteria for further clinical evaluation.