

New York State Biodefense Commercialization Fund
Grant Awardees: March 2022

Startups

- **Calder Biosciences, Inc. (\$750,000)**
Dr. Christopher Marshall
Developing Potent Subunit Vaccines for Infectious Diseases
Through its unique protein engineering technology, Calder Biosciences is developing more potent vaccine immunogens that provide better immunity and protection.

- **Glyphic Biotechnologies (\$2,850,659)**
Dr. Joshua Yang
Co-investigator: Dr. Daniel Estandian
Next-Generation Protein Sequencing for Detection and Mitigation of Infectious Disease Threats and Biological Toxins
Glyphic Biotechnologies plans to demonstrate the feasibility of achieving single molecule protein sequencing (SMPS) of a defined region of the SARS-CoV-2 spike protein, as well as test the feasibility of sequencing a mixed pool of SARS-CoV-2 spike protein.

- **Halomine, Inc. (\$2,000,000)**
Dr. Ted Eveleth
Fighting Fomite Transmission with Advanced Antimicrobial Chemistry
Halomine is focused on creating products that provide residual protection against viruses, bacteria, and fungi on surfaces and in materials to prevent the transmission of infectious diseases on every type of surface.

- **Inso Biosciences, Inc. (\$955,000)**
Dr. Harvey Tian
Co-investigator: Dr. Adam Bisogni
Improving Speed and Utility of Pathogen Whole Genome Sequencing
Inso Biosciences is advancing its unique approach to separate and enrich pathogenic cells from host cells and host DNA that will enable quick, easy, and low-cost direct whole genome sequencing of pathogenic samples.

- **Lab11 Therapeutics (\$500,000)**
Dr. Dusan Bogunovic
Co-investigator: Dr. David Levy
Broad-Spectrum Antivirals for Current and Emerging Infectious Disease Threats
Lab11 Therapeutics is developing modRNA- based broad-spectrum antiviral drugs targeting the host, with first indications being Influenza A and SARS-CoV-2.

- **Prometeo (\$1,500,000)**
Dr. Arvin Dar
Co-investigators: Dr. Ernesto Guccione, Dr. Ivan Marazzi, Dr. Alex Scopton
Hyper-Optimized Small Molecule Kinase Inhibitors as Anti-Viral Therapies
Prometeo is developing a drug design and synthesis platform to advance clinical compounds against several kinase targets that have critical roles in the host immune system and are strongly implicated in the life cycle and transmission of infectious viruses, including SARS-CoV-2.

- **Quicksilver Biosciences, Inc. (\$600,000)**
Dr. Erik Young
Single-Molecule Bioelectronics
Quicksilver Biosciences is developing a novel genomic diagnostics platform for infectious diseases that leverages custom-designed complementary metal oxide semiconductor integrated circuits.
- **RenBio (\$2,000,000)**
Dr. Neal N. Padte
Co-investigator: Dr. Rachel A. Liberatore
Rapid Delivery of Monoclonal Antibodies for the Prevention of Future Infectious Disease Outbreaks
RenBio aims to accelerate the development of a next-generation, nucleic acid-based antibody delivery platform technology to use against future infectious disease threats.

Academic Institutions

- **City University of New York** (collaboration with Cornell University) (**\$500,000**)
Dr. Adam Braunschweig (CUNY)
Co-investigator: Dr. Hector Aguilar-Carreno (Cornell)
Broad Spectrum Antivirals that Target Coronaviral and Flaviviral Envelope Glycans
Dr. Braunschweig and team are developing broad spectrum antivirals (BSAs) against enveloped viruses, which include flaviviruses (Zika virus, West Nile Virus, Dengue Virus), coronaviruses (SARS-CoV-1, SARS-CoV-2, MERS-CoV), paramyxoviruses (measles, mumps), retroviruses (HIV), and others.
- **Cold Spring Harbor Laboratory (\$325,517)**
Dr. John Moses
Co-investigator: Dr. Joshua Homer
Developing Shapeshifting Antibiotics for the Effective Treatment of Infectious Multidrug-Resistant Bacteria
Dr. Moses' group is developing a novel antibiotic class that utilizes dynamic shapeshifting molecules, developing drugs that sample biological space and target multiple sites simultaneously to provide a potential solution for multi-drug resistant bacteria (MDR).
- **Columbia University (\$381,000)**
Dr. Rafal Tokarz
TickDx: A Comprehensive, Rapid, Inexpensive Serologic Platform for Diagnosis of Tick-Borne Diseases
Currently available serologic tests for tick-borne diseases are unreliable in the early stages of disease and cannot test for more than one pathogen. The TickDx assay employs a panel of agent-specific synthetic peptides that provide superior diagnostic performance. With this test, our goal will be to provide the first standardized serologic assay for the diagnosis of tick-borne diseases that can be deployed in clinical laboratories.
- **Columbia University Irving Medical Center (\$498,000)**
Dr. David Brenner
Co-investigator: Dr. Steven Erde
Far-UVC: A New Technology with the Demonstrated Potential to Safely Reduce Airborne Disease Transmission in Occupied Public Spaces
Dr. David Brenner's group is testing the efficacy of far UVC light in reducing the amount of airborne microbes within actual occupied rooms.

- Icahn School of Medicine at Mount Sinai (\$250,000)**
 Dr. Domenico Tortorella
 Co-investigators: Dr. Benhur Lee, Dr. J. Andrew Duty
Development of Broad-Spectrum Antibody Therapeutics Against Henipavirus
The Mount Sinai group is developing broadly neutralizing antibodies against current and future henipaviruses to prevent viral infections.
- Memorial Sloan Kettering Cancer Center (\$463,216)**
 (in collaboration with City College of New York and Weill Cornell College of Medicine)
 Dr. Daniel Heller (MSKCC)
 Co-investigators: Dr. Ronald Koder (CCNY), Dr. Robert Schwartz (Weill Cornell)
Early Warning System for Cytokine Storm
Dr. Heller and team are developing a noninvasive prognostic sensor for COVID-19 and other hyper-inflammatory diseases to monitor inflammatory markers to prevent cytokine release syndrome.
- Rensselaer Polytechnic Institute** (in collaboration with Albany Medical College) **(\$500,000)**
 Dr. Jonathan Dordick (RPI)
 Co-investigators: Dr. Robert J. Linhardt (RPI), Dr. Dennis Metzger (AMC)
Development of Pentosan Polysulfate (PPS)-Based Nasal Spray to Block COVID-19
Dr. Dordick and collaborators are developing nasal formulations of Pentosan Polysulfate (PPS) as a combined prophylactic and early therapeutic against SARS-CoV-2 infection and its variants, as well as other respiratory infections.
- SUNY Polytechnic Institute (\$500,000)**
 Dr. Nathaniel Cady
 Co-investigator: Dr. Klemen Strle
Rapid Diagnostic Test for COVID-19 Infection History, Vaccination Status and Response to Variants
Dr. Cady's group has developed a unique antibody test that delivers high-content, high-sensitivity, rapid, easy-to-use, and low-cost COVID-19 immunity profiles to research laboratories, clinicians, and interested consumers.
- The Rockefeller University (\$368,731)**
 Dr. Charles Rice
 Co-investigator: Dr. Inna Ricardo-Lax
SARS-CoV-2 Replicon Delivery Particles for Pre-Clinical Drug Development
Dr. Rice's group has developed a non-infectious replicon and replicon delivery particle (RDP) technology to address the obstacles in antiviral drug development for highly infectious pathogens, including SARS-CoV-2.
- The Rockefeller University (\$350,295)**
 Dr. Mike Rout
 Co-investigators: Dr. Brian Chait, Dr. John Aitchison
Containing and Preventing COVID-19 Using Inhaled Nanobodies Directed Against Existing and Emerging Escape Variants of SARS-CoV-2
Dr. Rout and his team are exploring the neutralizing ability of an unprecedented repertoire of superior, differentiated nanobodies targeting the SARS-CoV-2 Spike protein.