

COVID-19 NC Collaboratory Projects: Infrastructure Core Facility

PI – Shannon Wallet, PhD

Your project summary has been reviewed by the COVID-19 NC Collaboratory Projects review team. The review team would like additional information about your project. Please provide the following by close of business, May 21.

Impact to the State (300-word limit)

- *Description of the problem or challenge being addressed and how the problem impacts those in the state of North Carolina*

The staggering statistics surrounding SARS-CoV2 highlight the need for **immediate action** to develop, implement and disseminate innovative solutions in a collaborative manner that will efficiently promote the translation of high-quality and -impact research. In response to the **immediate needs** of the research and medical community of the State of NC and born from collaborations between the UNC-CH Adams Schools of Dentistry, the School of Public Health, the School of Medicine, the NC TraCS (CTSA) and our existing DELTA Translational Facility, we have developed the DELTA-CoV2 Translational Facility **to facilitate immediate action** for translational research projects on COVID-19 which will **benefit the individuals of the State of NC**.

- *Describe how the proposed research will provide impactful solutions to the described problem to help the state of North Carolina*

This is a request support for the DELTA-CoV2 Translational Facility to achieve the following goals which will facilitate immediate action for translational research projects on COVID-19 which can benefit the individuals of the State of NC. To achieve these goals we will use established, CDC compliant, and EHS/IBC approved protocols and existing suite of multiplex assay services.

- **Aim 1:** To provide centralized clinical sample provisioning, tracking, and storage for investigator and institutional initiated short- and long-term investigations. **This will provide a robust infrastructure to prevent redundancies, streamline processes, and allow for immediate action.**
- **Aim 2:** To provide services, including sample processing, viral inactivation, and suites of high-throughput multiplex assays. **This will promote immediate yet standardized analysis for multiple sample types and individual investigator-initiated studies.**
- **Aim 3:** To disseminate our standardized practices, procedures, protocols and mineable datasets to the local, national and international research communities at large. **This will improve the efficiency, quality, and impact of observations so that new treatments and cures can be delivered to patients faster.**

Milestones (300 word limit): Description of what will be accomplished and what can be delivered by August 31, 2020, and by Dec. 31, 2020. The start date will be June 1, 2020.

August 31, 2020 Milestones –

- Fully established centralized clinical sample provisioning, tracking, and storage being utilized by UNC-CH investigators and their collaborators from around the state of NC.
- Fully established services, including sample processing, viral inactivation, and suites of high-throughput multiplex assays being utilized by UNC-CH investigators and their collaborators from around the state of NC.

Dec. 31, 2020 Milestones

- Dissemination of our standardized practices, procedures, protocols, and mineable datasets to the state, national, and international research communities at large, allowing NC to be a collaborative leader.
- A mineable biorepository incorporating a fully established sample usage oversight committee with engagement and buy-in from UNC-CH investigators and their collaborators.
- Application for extramural funding for sustainability of the DELTA-CoV2 Translational Facility
<https://grants.nih.gov/grants/guide/pa-files/PAR-19-099.html>
 - July 10th 2020 (1st submission); November 9th 2020 (revision if needed).

Budget Justification (200-word limit): Funds are limited. We encourage all teams to revisit their budget and determine if it can be reduced. Please also complete the provided budget template

Shannon Wallet PhD. PI of the EHS/IBC approved protocols for the BSL2+ collection, processing, storage and tracking of COVID+ samples at UNC-CH. She will drive the operations of this infrastructure including the direct supervision and management of all personnel.

Robert Maile PhD. The Co-Director (with Dr. Wallet) of the DELTA Translational Services Center. He will drive the overall project design, experiments, data collection, supervision, and management of this project.

Matt Wolfgang PhD. Dr. Wolfgang will lend his expertise on mechanism of pulmonary biology, microbial transmission in overseeing the collection and processing of pulmonary samples.

Will Lovell will leverage his extensive laboratory management experience to act as a central Coordinator for the Project and execute the necessary experiments.

Jordan Jacobs, Olivia Mitchem and Sussanne Meining will continue to be integral in the preparatory and ongoing work as we collect SARS-CoV-2+ samples and have the appropriate BSL2+ training.

ST Phillips will be responsible for the maintenance of the LDMS and IRB approved protocols the DELTA-CoV2 Translational Facility.

Materials and Supplies: consumable supplies, reagents required for sample collection, processing, and storage; reagents and kits needed for downstream multiplexing assays.

Equipment/Software: freezers, fridge, liquid nitrogen, small equipment for BSL2+ as well as the software and hardware required for the laboratory data management system (LDMS).