

SPECIFIC AIMS – EPIBIO4RX ADMINISTRATIVE CORE

The Administrative Core for EpiBioS4Rx will serve as the central nexus for all operational aspects of the Center without Walls (CWOW). This Administrative Core brings together the strongest teams, ensuring success of the Cores and Research Projects to achieve the goals and objectives of EpiBioS4Rx. **Scientific Premise: Epileptogenesis after TBI can be prevented with specific treatments; the identification of relevant biomarkers and performance or rigorous preclinical trials will permit the future design and performance of economically feasible full-scale clinical trials of antiepileptogenic therapies.** The CWOW has special administrative requirements in order to be successful, these include the management of each of the participating sites to ensure their efforts are complimentary, coordinated and maximally efficient. EpiBioS4Rx will include the Administrative Core, an Informatics Analytics Core (IAC), a Public Engagement Core (PEC), and three Research Projects focused on identification of biomarkers of epileptogenesis, targets for novel approaches to antiepileptogenesis, and preclinical trials of potential preventive therapies. We have now completed a three-year planning grant designed to identify available animal and patient data that might contain biomarkers of epileptogenesis and collected and analyzed these data, leveraging two existing bioinformatics platforms, in collaboration with other, more specialized systems. This constitutes a shared resource within the IAC, that will now be hosted entirely by the Laboratory of Neuro Imaging (LONI). There are protocols in place for the transfer and storage of data that will be used for the new, easily accessible common interface.

The EpiBioS4Rx Administrative Core will oversee, coordinate, and provide logistical support for the activities of the Cores and Research Projects, and oversee the management of the Shared Resource Facility, to provide critical infrastructure for CWOW investigators, and to make data, reagents, methods, and other resources available to the broader epilepsy research community. A public website will be developed and maintained to advertise the availability of these shared resources in addition to information about the CWOW. An undertaking of this magnitude necessitates a precisely defined level of coordination and interactivity. The structure of the partnership must be such that each participant works directly toward the goals of the project and contributes to an ongoing adjudication of the project progress, while they themselves are subjected to the same critical assessment. Thus, the partnership is equitable both in responsibility and accountability.

We have given considerable thought to the organizational structure for EpiBioS4Rx and will draw from over twenty years of extensive multi-departmental and multi-institutional collaborations of LONI, during which similar systems have been refined and fine-tuned to maximize the cooperative efforts of clinical, biological, computational, mathematical, and organizational expertise. The collaborative practices described here were developed in keeping with the mission and philosophy of a successful multidisciplinary program. Leadership of EpiBioS4Rx will consist of a Director and six other co-PIs, as well as Management, Executive, and Steering Committees. A Charter for the CWOW, universal protocols, common data elements, regulatory provisions, plans for data sharing, and an Authorship Agreement has been created. The timeline for building the new infrastructure as well as a plan for communications and cooperation among CWOW investigators and collaborators outside the CWOW are contained within the Charter.

In addition to facilitating collaborative efforts within and without the CWOW, the Administrative Core will promote career development for trainees and young investigators, and stimulate new research projects. Our ultimate objective is to create universal shared resources for the epilepsy community, to include an open shared epilepsy-specific bioinformatics portal, a standardized preclinical protocol for testing potential antiepileptogenic interventions with a list of the most promising preventive therapies, a population of subjects for future clinical trials of antiepileptogenic treatments, and a public engagement program to ensure patient involvement, adequate recruitment, and retention.

Specific Aim 1: To provide leadership and expertise regarding the Center's charter, universal protocols, regulatory provisions, and plans for a data sharing program.

Specific Aim 2: To facilitate collaboration within and among the Center's Cores and Research Projects, promote the career development of trainees and young investigators, coordinate collaboration with other NINDS- and non-NINDS-funded programs, and stimulate new collaborative research.

Specific Aim 3: To provide CWOW management, reporting of Center activities to NINDS members and to relevant oversight committees, to facilitate and provide logistical support for presentations of data at scientific meetings, to produce publications, and to assist in the preparation of additional research proposals and applications to regulatory agencies.