Postdoctoral Fellowship in Epigenetics and Neurodevelopment in Preterm Infants

APA-accredited: YES

Site: The Brown Center for the Study of Children at Risk at Women and Infants Hospital

Supervisor(s): Barry M. Lester, PhD, Primary Supervisor

Description:

The goal of this fellowship is to provide training in the study of neurodevelopment and epigenetics in infants born very preterm. Training goals will be met by participating in a clinical research program. The aim of the proposed research is to determine how the trajectory of epigenetic changes from birth to age 7 maps onto the trajectory of neurodevelopment over the same time period.

The program is based at the Brown Center for the Study of Children at Risk at the Alpert Medical School of Brown University and Women and Infants Hospital. The Center was created to address the causes and manifestations of neurodevelopmental disorders in children, and provide innovative and effective interventions. With the ultimate goal of ensuring that all children begin life with the promise of healthy neurobehavioral development, the Center is committed to identifying exposures and other conditions that place children at risk and to identifying characteristics of individuals and their contexts that promote positive outcomes. Understanding the manifestations and developing instruments for assessing neurobehavioral problems are key activities of the Center. A core Center mission is to deliver clinical treatment and evaluation that is based on the best scientific evidence, and to translate research finding back to the clinic. By integrating research on etiology, evaluation, and treatment, the Center provides a unique environment for working to advance the health and development of children. The Center is a Division of the Department of Pediatrics at Women & Infants Hospital. Women & Infants is the 12th largest stand-alone obstetrical service in the country with over 9,000 births per year including an 80-bed all single-family room Neonatal Intensive Care Unit.

Fellowship Aims:

- To provide the fellow with broad post-doctoral training in the area of epigenetics and neurodevelopment in preterm infants.

- To actively participate in data analysis of a longitudinal study of development in preterm infants from birth to age 7 as part of the NIH National Environmental Influences on Child Health Outcomes (ECHO) program (https://www.nih.gov/echo/about-echo).

- To be actively involved in presenting results at national meetings, writing original peer-reviewed manuscripts and writing grants.
**Fellowship Timeline**
The initial appointment is 2 years contingent upon satisfactory progress and can be renewed pending performance and availability of funds. The anticipated start date is negotiable.

**Research Activity Plan (90%)**
90% of the fellow’s time will be devoted to research, academic/didactic, and professional training experiences. The fellow will participate in an NIH-funded research project aimed at identifying epigenetic predictors of children’s developmental impairments in a sample of infants that were born very preterm. The participants for this study are enrolled in the Neonatal Neurobehavior and Outcomes in Very Preterm Infants (NOVI) study, which is part of the NIH national Environmental Influences on Child Health Outcomes (ECHO) program (https://www.nih.gov/echo/about-echo). NOVI includes ongoing collection of bio-samples for epigenetic analyses and information on developmental outcomes from birth to age 7. The fellow will work directly with the PI, (Barry Lester, Ph.D.) and liaise with researchers at the collaborating site, Emory University, to provide overall support in ensuring progress of the study.

The fellow will participate in the following activities:

- Analyses of longitudinal data relating DNA methylation to neurodevelopment: The fellow will be expected to work independently on analyses, while coordinating with the PI and study personnel to complete projects (44.5%).
- The fellow will be required to participate in weekly research meetings (2.5%).
- Drafting of manuscripts and presentation of research findings: Individually tailored goals will be established in this area (22%).
- Grant writing: Opportunities for the fellow to apply for independent funding will be available and is encouraged (21%).

**Clinical Activity Plan (0%)**
Opportunities for additional clinical experience will not be provided as part of the position.

- Treatment services: No
- Clinical assessment: No

Path toward licensure: YES_____ NO__X___

**Didactics (10%)**
The fellow may participate in the weekly postdoctoral research seminars offered through the Brown Post-Doctoral Training Program including:

- Psychiatry Grand Rounds (monthly)
- Pediatric Research Grand Rounds (optional)
- Pediatric Research Colloquium (optional)
- Perinatal Management Rounds (optional)
- Grantsmanship (weekly)
- DPHB T32 Core Seminar (weekly)
- Postdoc Core Seminar (monthly)
**Supervision and Evaluation**
Supervision will be provided in the form of one-hour weekly individual supervision (Dr. Lester). Every 6 months for the duration of the fellowship, the fellow and the supervisor will provide formal evaluations, and evaluations of the program relative to the goals and learning objectives of the fellowship.

**Resource Requirements**
Fellow will be provided with the following resources:

- Office space
- A computer and project specific software
- Internet access
- Telephone
- Travel support for presentations at national meetings

**Reporting and approval**
This fellowship will be part of the Child Track. The position has been discussed and approved by the Child track faculty in their monthly meeting of xx/xx/xx.

Postdoctoral Fellowship Track Coordinator

Director, Research Fellowship Program

Director, Postdoctoral Fellowship Training Program