What is the ESPI study?

Enhancing Successful Post-Baccalaureate Interventions (ESPI) is a multi-site research study supported by the National Institutes of Health.

What is the origin of the study?

The hypotheses underlying the ESPI project emerged from observations made during the first six years of the Post-Baccalaureate Research Education Program at Mount Sinai School of Medicine (Mount Sinai PREP).

Hypothesis 1: Multiple, short research experiences before doctoral study can engage students’ interest but do not provide them an optimal chance to work through the many longer-term challenges of the demands of research, of mastering concepts and protocols well enough to plan and execute reproducible experiments, and of interacting with a mentor and lab colleagues through periods of frustration as well as excitement. A corollary of this hypothesis is that longer intensive research experiences (e.g. one or more years or multiple summers in a single lab) would better prepare students for doctoral work and other intensive, some coached, demanding long-term activities might yield some of the benefits of long-term research experiences.

Hypothesis 2: Students from disadvantaged and/or minority groups often face impediments to success in doctoral work either because of unaddressed gaps in their educational background, their prior opportunities to develop specific skills or the support available to help them navigate an environment in which they may encounter feelings of alienation if left largely on their own. Even if a student perseveres and completes the degree under these circumstances, the experience is unlikely to support the level of confidence that is needed to move forward in an independent research career.

What are the aims of the ESPI study?

The ESPI study has two major aims. First, we will try to identify mentored/coached activities during high school, college and the post-college periods that enhance the successful progress of under-represented minority students as well as students across the total spectrum of backgrounds into research careers in biomedical sciences. Second, we will test whether introduction of specific programmatic elements of Mount Sinai School of Medicine’s Post-Baccalaureate Research Education Program (Mount Sinai PREP) into the pre-doctoral research training programs (PhD and MD/PhD programs) of the institution will enhance successful retention and progression of diverse students in those programs.

Who are the investigators?

Terry Ann Krulwich, PhD - Principal Investigator of the study. Dr. Krulwich is Sharon and Frederick A. Klingenstein-Nathan G. Kase, MD Professor of Pharmacology and Systems Therapeutics and Director of Mount Sinai PREP.

Carol Bodian, DrPH – Statistician/Experimental Design. Dr. Bodian is an Associate Professor of Anaesthesiology.

Gary Butts, MD – Associate Dean for Diversity, Director of the Center for Multi-Cultural and Community Affairs, Associate Professor of Pediatrics, Community & Preventive Medicine and Medical Education.

Robert Fallar, MS – Director, Mount Sinai Survey Center

Suman Saran, BA – Project Manager

Who are the study participants?

For the first aim, the ESPI study is mounting a broader based exploration into activities before graduate school that enhance progress through graduate programs and into careers in biomedical science. Mount Sinai PREP
will work with participating institutions nationwide to recruit and track the experiences of current and past PREP, PhD and MD/PhD students at different stages in their education and careers. For the second aim, we will introduce into Mount Sinai's PhD and MD/PhD environment some of the programmatic elements that have fostered an outstanding record of progress and accomplishment among the majority of Mount Sinai PREP alumni who entered doctoral programs. These elements may bring the completion and achievements of diverse students in the local doctoral programs closer to the >90% progression of Mount Sinai PREP alumni. If so, these elements could be examined in other academic settings.

**What are applicable outcomes that are anticipated from the ESPI study?**

The information obtained in this study should make it possible to better design pipeline and research training programs as measured by the progression of diverse students through these programs and into independent research careers.