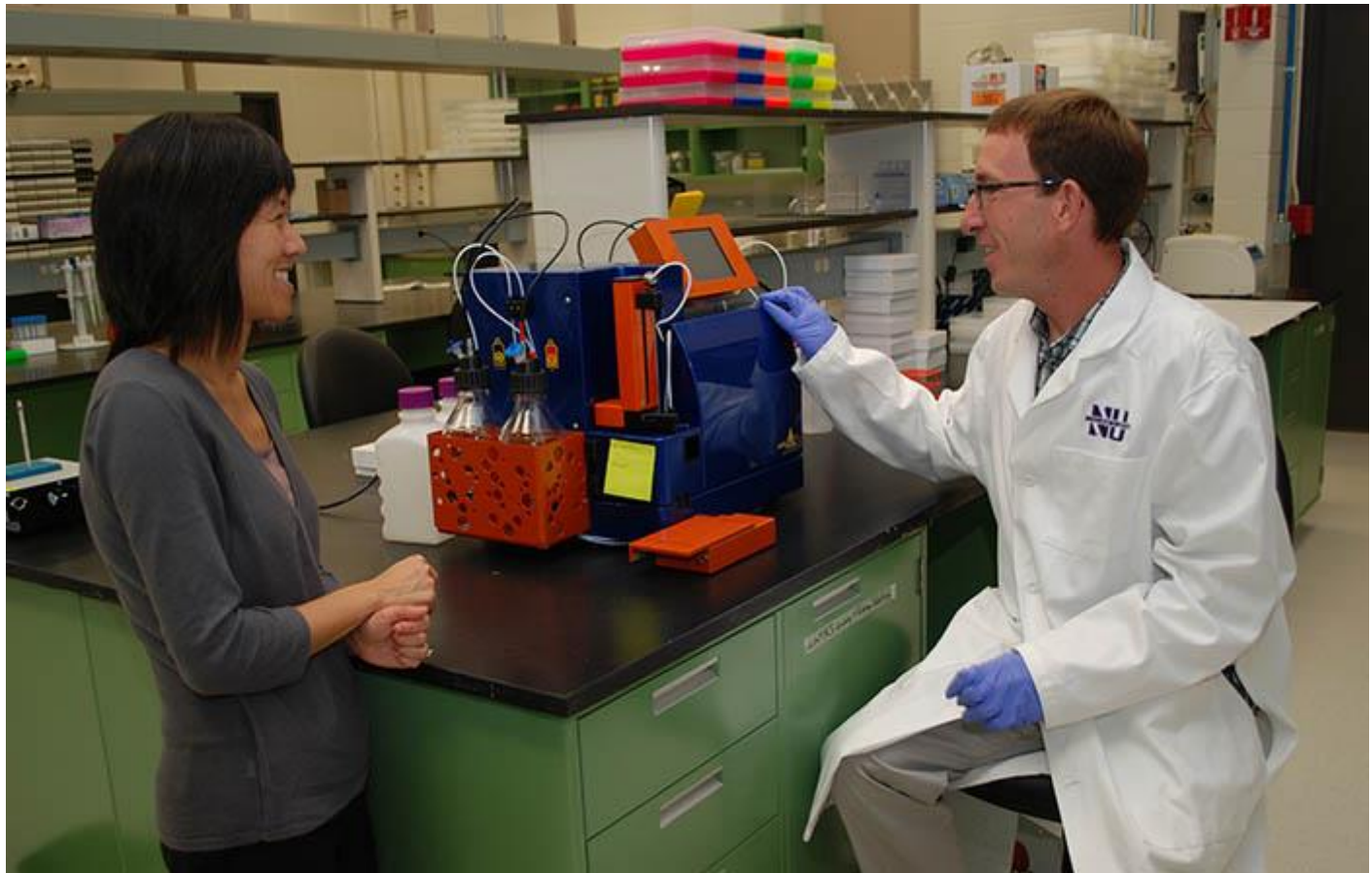


# Unearthing the Foundations of Health

Center studies links between social contexts and health

---



*Edith Chen and Greg Miller analyze a blood sample using a cell sorter, which can isolate specific types of cells, in their new research lab.*

Compared to their peers, individuals with low socioeconomic status (SES) are two times more likely to be hospitalized and have 50 percent higher death rates. Though research has established a connection between low SES and higher risk for disease and mortality, little is understood about the underlying biological mechanisms. The recently launched [Foundations of Health Research Center](#), led by IPR psychologists [Edith Chen](#) and [Greg Miller](#), seeks to expand knowledge in this area.

As members of IPR's [Cells to Society \(C2S\): The Center on Social Disparities and Health](#), Chen and Miller are an integral part of an innovative effort by IPR faculty to understand how social, economic, and cultural contexts affect physical and mental health, especially among lower-SES groups. Specifically, Chen and Miller look at the chronic stressors related to SES and the influence they have on the endocrine, immune, and metabolic systems over time.

“Foundations of Health is so important because it supports what we’re really trying to understand—how social environments get under the skin, and how they do that differentially,” Chen explained.

The effort has ramped up quickly since new office and lab space opened in fall 2013. The space was designed to be family friendly so that parents and children would feel at ease during confidential in-office interviews and health screenings. There is also a state-of-the-art lab where biological samples and data can be processed. In addition to research, the health center also offers critical teaching and learning opportunities, with more than 15 faculty, staff, graduate students, and undergraduates currently involved.

“Foundations of Health represents a tremendous addition to the research infrastructure at Northwestern,” said IPR anthropologist and C2S Director [Thomas McDade](#). “It has the capability to implement cutting-edge laboratory methods that reveal the molecular pathways through which social environments shape health over the lifecourse, and it presents a warm and welcoming presence to community members who make this research possible.”

Chen and Miller are also examining the social and psychological protective factors that help some low-SES individuals maintain good physical health despite the adversity they face. For example, children exposed to social and economic adversity early in life often show increased susceptibility to the chronic diseases of aging as adults. But their research has shown that some children develop a buffer against these outcomes by using “shift-and-persist” strategies, which enable individuals to “shift” by finding ways to adapt to stressful situations and “persist” by finding the optimism to hold on to long-term goals.

“We’re a bit different from most labs in that we do the biology part, but we also really try to do the psychology part—we use more traditional social science and psychological strategies,” Miller said.

Currently, most of the center’s research is related to the [Family Asthma Study](#), which seeks to explain why low-SES children experience worse asthma outcomes than others. With funding from the [National Institutes of Health](#), the study examines both social and physical environmental factors that could be contributing to these disparities. It also looks at how different types of communities and families can affect children’s asthma.

In addition to the asthma study, Chen and Miller recently began two new studies that will look at how stress, social relationships, and SES affect in utero development. One will study how maternal SES and the factors related to it affect babies’ development during the later months of pregnancy, as well as at birth. The other looks at how maternal lifestyle and social conditions affect development during the earlier months of pregnancy.

“Using methods from molecular biology, we can profile different genes that are turned on and off in the placenta to find out if women who differ in SES and levels of stress have different patterns of gene expression and activity,” Miller explained. He hopes that this will provide them with an idea of what babies are being exposed to in utero and shed further light on how poverty undermines health.

*[Edith Chen](#) and [Greg Miller](#) are both professors of psychology and IPR fellows. [Thomas McDade](#) is professor of anthropology, director of IPR's Cells to Society (C2S): The Center on Social Disparities and Health, and an IPR fellow.*