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Focus on Child Health: Landmark National Research Initiative to Examine Development of St. Louis Kids

SLU, SIUE, Washington University and SIU Med School Collaborate

ST. LOUIS — The National Institutes of Health has selected the city of St. Louis and Macoupin County, Ill., as sites for the National Children’s Study, the largest study of child and human health ever conducted in the United States. The extensive population-based study looks at the health and development of children by following them from before birth to adulthood.

“The National Children’s Study is an investment in the future,” says Terry Leet, Ph.D., lead investigator of the St. Louis and Macoupin County study sites and chairman of the department of community health at Saint Louis University School of Public Health. “Examining the kinds of questions that influence the health and well-being of children is critically important to the entire community, whether you are a parent, grandparent or researcher. What we find could be a potential gold mine of data for scientists who are studying what causes diseases in children.”

Saint Louis University School of Public Health is partnering on the project with Saint Louis University School of Medicine, Southern Illinois University Edwardsville School of Nursing, Southern Illinois University School of Medicine in Springfield, Washington University School of Medicine in St. Louis and St. Louis Battelle Memorial Institute.

As the lead institution, Saint Louis University School of Public Health has received a \$26 million, five-year contract from the National Institute of Child Health and Human Development and a consortium of federal agencies including the National Institute of Environmental Health Sciences (NIEHS), the Centers for Disease Control and Prevention (CDC) and the U.S. Environmental Protection Agency. Saint Louis University is one of 22 new study centers added to the National Children’s Study, which will follow a representative sample of 100,000 children from before birth to age 21. The study seeks information to prevent and treat some of the nation’s most pressing health problems, including autism, birth defects, diabetes, heart disease and obesity.

Saint Louis University expects to enroll 250 participants from the city of St. Louis and 250 participants from Macoupin County, a rural county, for each of four years starting in 2009. SIU School of Medicine in Springfield will provide expertise and liaison to various health care providers as SIU physicians offer both obstetrical and primary care services in central Illinois, including Macoupin County. SIU graduates also are in practice in the region. “This project offers the chance to put the St. Louis area and Macoupin County on the forefront of research into maternal and child health,” Leet says. “It also fosters collaboration between the region’s key research institutions.”

The study examines health patterns of a large population and is similar in scope to the Framingham Heart Study and the Women's Health Initiative, which also investigated risk factors for major chronic diseases. Data will be collected at home and in health clinics. The study begins either prior to conception or in the first trimester of pregnancy. "There are a lot of things that happen prior to birth that set the thermostat on how vulnerable you are to risk factors for diseases," says Louise Flick, DrPH, co-principal investigator and professor of nursing from Southern Illinois University Edwardsville School of Nursing. "We are studying children to age 21 because some of the exposures we suspect are important have consequences that take a lot time to develop."

Researchers will gather data on a child's genetic makeup and a number of biological, chemical, environmental, physical and psychosocial factors. Most of the money from the grant will be spent hiring data collectors for both sites. Researchers will collect environmental samples from the air and water where children spend more than 30 hours a week to learn about potential exposures. They will analyze blood, urine, hair and fingernail samples from children. In addition, children will be screened for asthma, birth defects, diabetes, injury susceptibility, obesity and physical and mental development disorders. The outcomes of pregnancies, such as preterm delivery, also will be evaluated.

From that repository of information, scientists can look at how certain factors alone or in combination with others affect pregnancy outcomes, child development and health and an adult's likelihood of developing certain diseases. "The National Children's Study is an important step in setting the foundation for understanding the environmental and genetic determinants of pediatric and adult diseases," says Michael DeBaun, M.D., MPH, co-principal investigator and associate professor of pediatrics and biostatistics at Washington University. "We now have a unique opportunity coupled with a high level of responsibility to fulfill the mission of this important award for the next generation."

The cost of the research is estimated at \$3 billion over the next 25 years. Congress appropriated \$69 million in fiscal year 2007 for the National Children's Study.

Saint Louis University School of Public Health is one of only 38 fully accredited schools of public health in the United States and the nation's only School of Public Health sponsored by a Jesuit university. It offers master's degrees and doctoral programs in six public health disciplines and a number of joint degrees involving business, law, medicine, nursing and social work. It is home to 12 nationally recognized research centers and draws students from across the United States and from 21 foreign countries.

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Editor's Note: To arrange an interview, call Nancy Solomon, Saint Louis University, at (314) 977-8017; Bethany Forsythe, SIU Edwardsville, at (618) 650-3653; Nancy Zimmers, SIU School of Medicine, (217) 545-3854; or Joni Westerhouse, Washington University, at (314) 286-0120.