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VCU part of international research team awarded Wellcome Trust Foundation grant to study molecular genetics of depression

(RICHMOND, Va., March, 2008) – Virginia Commonwealth University is part of an international research team that received a Wellcome Trust Foundation grant totaling more than \$2.8 million to identify the genetic variants that have an impact on the risk for recurrent major depression.

The goal of the five-year project, a collaboration between researchers based at the University of Oxford in England, [VCU](#) in the United States, and Fudan University in Shanghai, China, is to identify genetic variants which impact on the risk for recurrent major depression.

[Kenneth S. Kendler, M.D.](#), a professor of psychiatry and human genetics in VCU's School of Medicine, is a key collaborator on the study and is working with professors Jonathan Flint, who is the project's principal investigator, and Yiping Chen, both at the Wellcome Trust Centre for Human Genetics at Oxford University; and Shen Xun, a professor from Shanghai.

"This is an especially exciting project first because it will be the largest of its kind to try to understand the genetic underpinnings of an especially common and disabling psychiatric disorders, and second, because of the challenge and opportunities to conduct this research with an collaborative international groups," said Kendler.

"Our group at VCU has the responsibility to train and supervise the ratings which will be taking place at up to 15 different sites throughout China," he said.

According to Kendler, because major depression, MD, is caused by many genes and environmental factors and their interactions, progress in discovering specific genetic risk factors has been slow. Low-cost genotyping technologies have recently made possible whole genome analyses of association between genetic variation and disease, but the complex origins of major depression indicate that no single study will be definitive.

"It's important that large, well characterized data sets are made available. We propose to carry out a study of major depression sufficiently powerful to detect the small genetic effects now known to contribute to susceptibility to the condition. Our primary objective is to establish a large and freely available data set of phenotypes and genotypes," said Kendler.

The team plans to collect data from 6,000 women with recurrent disease and 6,000 women without the condition to be used as controls. Study participants will be made up of women who are of Han Chinese background – so the participants will be genetically and ethnically homogeneous. Kendler said that Shanghai, China, is one of the few places in the world where it will be possible to acquire high-quality phenotypes in a relatively short space of time.

The team will carry out a whole genome association analysis, which assesses variation throughout the human genome through the analysis of between 500,000 and 1 million genetic markers. Their results, genotypes and phenotypes, will be made freely available through a Web accessible database.

In July 2007, VCU hosted a week-long training session for a delegation of psychiatrists from China involved in the research.

During the workshop held at [VCU's Virginia Institute for Psychiatric and Behavioral Genetics](#), attendees were instructed on how to assess depression in study participants using detailed research instruments. This involved learning some new interview skills through role playing. These interview skills differ from those used to assess clinic patients on a daily basis. Also, the nuances of questioning used to assess clinic patients differs from how questioning is done in a scientific research setting. There are also a variety of layers to the research interview process, which is estimated to take approximately 60 to 90 minutes.

Following the workshop, the delegates returned to China to train other doctors in various health systems on how to assess for depression among study participants and to begin data collection. Kendler, along with Lisa Halberstadt, also with the VCU Department of Human Genetics, visited Shanghai in September 2007 to assist with the training program.

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About VCU and the VCU Medical Center: Virginia Commonwealth University is the largest university in Virginia and ranks among the top 100 universities in the country in sponsored research. Located on two downtown campuses in Richmond, VCU enrolls nearly 32,000 students in 205 certificate and degree programs in the arts, sciences and humanities. Sixty-five of the programs are unique in Virginia, many of them crossing the disciplines of VCU's 15 schools and one college. MCV Hospitals and the health sciences schools of Virginia Commonwealth University compose the VCU Medical Center, one of the nation's leading academic medical centers. For more, see www.vcu.edu.