

CIAHD January 29, 2009 Research Meeting

(Summary Minutes)

Convened: 5:00 p.m. (Eastern)

Attendees: Sandra Albrecht, Shawn Boykin, Ana Diez-Roux, Amanda Dudley, Nancy Fleischer, DeMarc Hickson, James Jackson, Jonetta Johnson, Aydin Nazmi, Kiarri Kershaw, Briana Mezuk, Jane Rafferty, Whitney Robinson, Del Rodrigo, Daniel Sarpong, Amy Schulz, Yan Sun, Herman Taylor, Marc Turenne, Monique Willis, Shun Yi Wu

### **Administrative Items**

**CIAHD Symposium at Jackson Heart Study (JHS):** Tentative date has been set for Fall October 15-16, 2009 in Jackson, MS.

The objective is to bring junior and senior investigators together in order to discuss psychosocial and neighborhood predictors and cardiovascular risk factors in African Americans using Jackson Heart study data and other data. December 2009.

**Summer Internship:** CIAHD funds for summer internship. Students at the Master's and PhD levels are encouraged to apply. If you have any interested candidates please let Amanda know as soon as possible. Presentations will be required from each intern. Amanda and Ana will work on putting together clear objectives for the internship.

### **Presentations**

**2008-2009 Funded Pilot Project. PI Yan Sun,** "A Comparative Study of the Prevalence and Predictors of Hypertension in Chinese living in China vs. the United States."

**Members Comments:** Hypertension awareness rate is low 20%. Overall treatment is in single digit percentage. The higher education level the higher blood pressure; same for income. Higher SES people have more hypertension in China. MESA sample excludes people with a history of cardiovascular disease at baseline. Numbers are not adjusted for age. No gender differences in MESA Chinese. Gender differences are only present in the rural and younger populations. International comparisons are very interesting and often times shed a lot of light on race and ethnic differences; the challenge is the comparisons of the same group of people after they migrate.

Would be interesting to see if there are changes in cardiovascular disorder with regard to hypertension. Raises the question whether we are seeing parallel changes with regard to some of the other disorders. David Takeuchi did a large study, there are reports on hypertension NLASS data set archived at ICPSR. Interesting to look at the correlation structure for differences.

**Questions:** What is the definition of Hypertension? Has there been any other country that has increases like this? Definition of hypertension is 149. This trend is not surprising when you look at developing countries but the pace is so fast due to changes in the social economics and personal lifestyles.

In MESA was it found that higher SES the more hypertension as well? Gradients were found in different directions. Particularly in men for hypertension and BMI.

How does the overall prevalence in MESA compare to the prevalence in Tianjin hypertension sample? It is lower in MESA.

Any information on the Tianjin on whether they have had a heart attack or stroke and compare to MESA? Yes, still very low.

Does MESA ask the family history of any cardiovascular events? Yes, there is a question on family behavior, not yet complete.

Do they take the same or similar to MESA measurements in the China sample and average number of measurements for blood pressure? Out of three measurements they take the later two.

Are most of the MESA Chinese also likely to be Han? Yes, slight 98% due to real life experiences. Whenever possible they will try to find a way to say they are not Han.

Will work be published in China? Yes, everything from the Tianjin will be published.

**PI – Sharon Kardia, presented by Yan Sun** “Genetic and Social Factors in Blood Pressure Control in Hypertensives.”

**Member comments:**

There is a problem when there is not a whole lot of variation on something when you are looking at it in terms of how it varies with something else.

**Questions:**

The linkage studies allow you to see using markers what things travel? Also simulated within a family not just the individual. This is how people start to narrow in on the importance of things genetically.

Is the linkage more appropriate for detecting rare variance? The linkage is good at detecting those variants that are inherited among families.

With the genetic you can only look for genes that you know something about the biological function - the basis of your hypothesis.

Is most of this identical in everybody? Mostly, however there are some locations that vary which is a very small percentage of the total genome and different combinations will yield lots of different possibilities.

How do you know which genes are candidates? Derived from very basic molecular biology, animal models, cell lines and rare disease models. All based on prior knowledge.

How much variation can there be given among A, T, C, or G in a particular location? Only two –three possibilities. Very frequent all over the genome.

What does the statement mean “Variation that occurs in least 1% of the population? This is the definition of the polymorphism for the current snip. We are trying to measure the common or more frequent variants so the numbers are relatively smaller. They are not all variants since we are unable to measure; not sure exactly how many there are. Anything that you call a variant you have to be able to see the polymorphous.

Definition of a SNP? A particular location where the DNA base change in at least 1% of the population.

Of all the base players of DNA, what percentage are SNPs according to this definition? Roughly 3-5 million of 3 billion.

How do you do the GWAS analysis? For each person there are 906,000 variables to tell you what base player in that particular SNP. For each individual and each location what's the genotype. This is like having a million predictors.