1. Title:
Plasma CETP: Relationship to lipids, lipoproteins, apolipoproteins, and apoE genotype: the role of environmental factors

2. Writing group:
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3. Timeline:
Analysis of CETP-mass plasma concentrations will be completed within 2-3 months; all other data collection is complete.

4. Rationale:
CETP (cholesteryl ester transfer protein) circulates in the blood in association with HDL₃ and very high density lipoproteins. CETP acts to equalize the core composition of lipoproteins by transporting neutral lipids among lipoprotein particles. A number of correlations between CETP plasma levels and lipoprotein concentrations have been demonstrated, and several volitional factors such as diet, exercise, and alcohol consumption are thought to affect plasma CETP levels as well as lipoprotein concentrations. CETP gene expression is increased by a cholesterol-rich diet, alcohol consumption as well as physical exercise may be associated with reduced CETP levels in the circulation. Many of these correlations are based on measurements of CETP levels by activity assays thought to reflect CETP mass. However, we have evidence to suggest that CETP levels measured by such functional assays are influenced by other plasma factors unrelated to true CETP activity and are therefore not identical to CETP mass. In manuscript proposal 183, CETP mass is measured in already selected 150 cases and 150 controls of the PPL study. Studying potential associations among CETP mass, plasma lipids, lipoproteins, and apolipoproteins as well as environmental influences on these associations would appear to be a logical use of data already available.

5. Main hypotheses/issues to be addressed:
Characterize the relationship among CETP mass, plasma lipids, apolipoproteins and lipoproteins and environmental factors such as diet, alcohol use, and level of exercise.

6. Data Requirements:
CETP mass measurements have been approved for Mx 183 and should be completed within the next 3 months. Data analysis will be performed by Dr. Boerwinkle. Other variables: lipids, apolipoproteins, lipoproteins, Lp[a], apo[a] phenotype, hemostatic factors, BMI, blood pressure, smoking status, alcohol consumption, physical activity, gender, age, field center, dietary information, apoE genotype, LDL-size.