1. Title (length 26):
ABI & Arterial Wall Thickness
Full title: Association of Ankle-Brachial Index (ABI) to Carotid and Popliteal Arterial Wall Thickness: The ARIC Study

2. Writing Group:
(lead) ZJ Zheng, AR Sharrett, A Dobs, LE Chambless, FJ Nieto, HA Tyroler, G Evans, G Heiss

3. Timeline:
Analyses are expected to be completed within 3 months; a report formatted as a draft manuscript can be presented to the writing group 2 months after the completion of the analysis.

4. Rationale:
The Ankle-Brachial Index (ABI), a ratio of ankle systolic blood pressure to brachial systolic pressure, is used in clinical practice to assess the patency of the lower extremity arterial system and to screen for the presence of occlusive arterial disease. Low ABI values have been strongly associated with CVD risk factors, subclinical and clinical CHD, and CVD mortality. Studies in Pittsburgh and the Cardiovascular Health Study (CHS) have found that the ABI is correlated with carotid plaque measured by Duplex ultrasonography. These results suggest that the ABI may be a marker for generalized atherosclerotic disease. Little, however, is known about the relationship between ABI and arterial wall thickness at carotid and popliteal arterial beds.

5. Main Hypothesis:
1) ABI is inversely associated with intimal-medial wall thickness (IMT) at carotid and popliteal arteries measured by B-mode ultrasound. 2) The association is of similar magnitude for the carotid and popliteal arteries.

6. Data:
The ARIC visit 1 data set will be used to test the main hypotheses. Dependent variables include imputed grand mean carotid wall thickness and popliteal arterial wall thickness. The main independent variable is the ABI, used as continuous and categorical measurements. Covariates include sex, race, age, and education level. Established CVD risk factors will be considered as potential confounding factors (not as explanatory variables) in relating ABI to intimal-medial thickness (IMT) at the two arterial beds. Diabetes mellitus will be considered as a potential effect-modifying factor. Data analysis is to be performed by the lead author.