1. Title: Putative determinants of weight change and weight cycling.

2. Writing Group:
(lead) Juhaeri, June Stevens, HA Tyroler, LE Chambless, Daniel Jones, Donna Arnett
and other interested investigators

3. Timeline:
We plan to begin the data analyses in the Fall 1998 and complete the manuscript within one year. Data are available from ARIC study visits 1, 2, and 3.

4. Rationale:
Results from the National Health and Nutrition Examination Survey (NHANES) showed that the prevalence of overweight increased 8% between NHANES II (1976 to 1980) and NHANES III (1988 to 1991) among US adults aged 20-74 years (Kuczmarski, 1994). Prevalence of overweight, however, was different among race-gender groups. The highest prevalence was among African American women (49.1%) and the lowest was among African American men (30%). Other national data have shown a high cumulative incidence of weight change in the US population (Williamson, 1993). Among men, 36.2% lost at least 5% of initial body weight and 38.2% gained at least 5% of initial body weight during the follow-up. Among women, the corresponding values were 37.8% and 39.5%.

Few studies have examined the putative determinants of weight change. In the Coronary Artery Risk Development in Young Adults (CARDIA) Study (Burke, 1996), a study among young adults aged 18-30 years, the putative determinants of weight change were examined but weight cycling was not addressed because they had only two visits.

We will examine weight in visit 1, visit 2 and visit 3. Weight change within visit 1 visit 3 will be defined as the slope of the linear regression between weight and time of visit. Weight cycling will be defined as weight gain from visit 1 to visit 2 followed by weight loss from visit 2 to visit 3, or weight loss followed by weight gain within corresponding visits. Weight cyclers will be compared to those who gained weight, lost weight, and had stable weight. General linear regression will be used to examine weight change (Kleinbaum, 1988) and logistic regression will be used to examine the putative determinants of weight cycling (Hosmer, 1989).

5. Main Questions to be Addressed:
1) Are ethnicity, age, gender, intention to lose weight, BMI at baseline, smoking, preexisting illness, education, physical activity, energy intake and % calories
from fat associated with weight change?
2) Are ethnicity, age, gender, intention to lose weight, BMI at baseline, smoking, preexisting illness, education, physical activity, energy intake and % calories from fat associated with weight cycling?

6. Data Requirements:
Variables needed:
   Outcome variables (visit 1-3):
       Weight change
   Others:
       BMI at baseline height, age, gender ethnicity, education smoking, physical activity, pre-existing illness, reported dieting, energy intake, % calories from fat