1. Full Title: Waist to Hip Ratio, Insulin Level, and Breast Cancer Risk  
   Abbreviated title (length 26): Insulin and Breast Cancer

2. Writing Group (list individual with lead responsibility first):
   Lead: Pamela J. Mink, MPH
   Address: University of Minnesota  
           Division of Epidemiology  
           1300 South Second Street, Suite 300  
           Minneapolis, MN 55454-1015  
   Phone: (612) 626-8873  
   Fax: (612) 624-0315  
   Email Address: mink@epivax.epi.umn.edu

   Eyal Shahar  
   Aaron R. Folsom  
   Wayne Rosamond  
   Anthony Ahlberg

3. Timeline (anticipated completion dates):
   Data analysis                     7/98  
   Manuscript preparation     9/98

4. Rationale:
   WHR has been associated positively with breast cancer in several case-control, but few  
   prospective, studies. High WHR has been associated with increased insulin levels, and  
   insulin may play a role in tumor promotion. To date, the association of pre-clinical  
   insulin level with breast cancer incidence has not been examined prospectively.

5. Main Hypothesis:
   WHR and fasting serum insulin level are associated positively with breast cancer  
   incident.

6. Data (variables, time window, source, inclusions/ exclusions):
   Incident breast cancer cases are identified as part of the ARIC Ancillary Cancer Study.  
   V1 values of insulin, WHR, BMI, weight at age 25, ages at menarche and menopause,  
   type of menopause, exogenous estrogen use, total energy and dietary fat intake, physical  
   activity, alcohol, smoking, race, age and education level.  
   AMHA form: age at first birth, mammography, lactation history, family history of breast  
   cancer.
Study design: prospective cohort study
Analysis: proportional hazards regression
Inclusions: females, post-menopausal, no self-reported history of cancer at V1, non-diabetic, completed fast (10 hours).