

Annual Report  
July 1, 1986 - June 30, 1987  
Department of Epidemiology

I. DEPARTMENT ORGANIZATION AND ADMINISTRATION.

The Department of Epidemiology is comprised of a multidisciplinary faculty offering professional training in seven primary program areas: Cardiovascular Disease, Cancer, Environmental/Occupational Epidemiology, Health Services Research, Infectious Disease, Reproductive Epidemiology and Social/Behavioral factors affecting disease. Responsibility for coordination of each program area has been delegated to a Program Director or Co-Directors who specialize in the specific area. The Department's teaching programs are built upon a firm foundation of research activities. The Department is administered by the Chair, assisted by a Deputy Chair for Academic Affairs and by the following committees and assemblies:

ACADEMICS

The Admissions Committee includes faculty in all major research areas of the department. Following individual faculty reviews of all applications, the Admissions Committee evaluates the strengths and weaknesses of each, ranking the applicants who are acceptable in order of priority. The Committee submits its recommendation to the Department Chair, who makes the final recommendation to the Graduate School.

The Graduate Studies Committee (GSC) concerns itself with the broad issues of curriculum, focusing on the insufficiencies in current course offerings, and making recommendations for the development and implementation of courses designed to meet those needs. In addition, as issues arise from the general faculty concerning academic policy or procedures, the GSC is charged with studying the issue and reporting back to the full faculty with recommendations for future policy.

The Full Faculty serves as a Promotions Committee to consider the promotion of students who are completing their masters work and wish to continue into the doctoral degree program. Student petitions to continue into the doctoral degree program are presented by the advisor. The advisor also provides a summary of the student's work so far in the Epidemiology program, and a recommendation regarding the student's potential and suitability for doctoral work. The Promotions Committee submits its recommendation to the Department Chair for implementation.

The Doctoral Qualifying Examination Committee and the Masters Comprehensive Examination Committee are responsible for developing and administering the two major examinations for the Doctoral and Masters programs. Membership in these committees rotates on an annual basis. Both are assisted by the department's Registrar. Additional input is provided by the Graduate Studies Committee and the Full Faculty.

## GENERAL ADMINISTRATION

The Full Faculty meet regularly to discuss ongoing and proposed research projects, and to discuss academic and administrative issues. Meetings are open to students except when matters of a confidential nature are to be discussed.

The Seminar Committee is chaired by a faculty member on an annual rotation basis. The Committee Chair receives suggestions for speakers from all faculty and students, invites the speakers, and organizes the seminar schedule for the fall and spring semesters. Seminar activities are evaluated at the end of each semester by the entire faculty with participation from students.

The Space Committee concerns itself with the issues of space utilization and needs for the Department. The Committee meets regularly to discuss and make recommendations regarding space allocation for the entire Department, which includes faculty, students, project groups and the administrative staff.

The Computer Committee (COMCOM) is comprised of faculty members, students, and administrative staff. The Committee will assist in providing adequate User Service for students and faculty, developing specific recommendations for computer budgets in grant applications, and establishing a departmental resource for information regarding equipment purchases.

Support Staff

(as of June 30, 1987)

Administrative Staff

Gail King	Administrative Manager
Joyce Allen	Registrar
Nancy Colvin	Assistant Registrar
Jinny Reid	Secretary to the Chair
Carolyn Cooke	Accounting Office Manager
Linda Crosson	Accounting Technician
Phyllis Johnson	Administrative Assistant

Secretarial Staff

Lisa McPherson	Admin. Secretary V
Edna McKinnon	Secretary IV
Betsy Seagroves	Secretary IV
Mimi Haebig	Secretary IV
Carmen Woody	Secretary IV
Jane Foust	Secretary IV
Carol Morton	Secretary IV

Research Staff

Jo Heiss	Research Associate
Ed Hunt	Social Research Assistant
Marilyn Knowles	Social Research Assistant
Susanne Wolf	Research Associate

Data Processing Staff

Terry Hudgins	Applications Analyst Programmer II
Robert Kleckner	Applications Programmer II
Veda Manley	Data Processing Coordinator
Vic Rhodes	Applications Programmer II

Employee Terminations

Wayne Davis	Applications Programmer II
Edward Siff	Social Research Assistant
Diane Ramsey	Social Research Assistant
Becky Townsend	Secretary IV

## II. INSTRUCTIONAL PROGRAMS

## A. Courses and Curricula

## 1. Major Changes During the Year:

The examination of the curriculum continued with concentration on biostatistics and computer courses available to Epidemiology students. Plans were made for developing new options in computer instruction.

## 2. New Programs Planned or Deletions Made:

The infectious disease area continued its expansion, with new courses in sexually transmitted disease and hospital epidemiology. The course in pharmacoepidemiology originally offered as a trial, was established under its own title. A course in contraceptive epidemiology was initiated.

## 4. Participation in Interdepartmental or Interinstitutional Programs:

1986-87 brought the first students from newly developed liaison programs with the Dental School and with the Department of Psychiatry.

Liaisons continue with programs such as the Robert Wood Johnson Clinical Scholars Program, the Preventive Medicine Residency Program, the Duke University Occupational Medicine Program, the NCSU Veterinary Medicine School, the Duke Program on Aging, Burroughs-Wellcome, the Carolina Population Center, Family Health International, the NIEHS, the EPA, the Veteran's Administration, the Cancer Research

Center, and the School of Public Health off-campus programs.

5. Comment on the Quality of Students.

The Department received applications from an unprecedented number of unusually qualified students. A decision was made to increase the admissions quota from 25 to 35, to permit us to enroll a greater number of these outstanding individuals. All students have demonstrated their academic and research ability before coming to the Department. GRE quantitative scores are consistently above the 70th percentile.

6. Apparent Trends in Job Placement of Graduates.

Demand for graduates in Epidemiology, particularly at the PhD level, continues to be high, with an increasing demand for graduates in the areas of infectious disease, occupational, cancer and reproductive epidemiology.

7. Minority Student Enrollment Efforts.

Inquiries and applications from qualified minority students have been vigorously pursued by letter and by telephone. Applicants have been referred to various faculty members and students for personal contact. In particular, meetings were arranged with current minority students, who have been able to discuss the social and academic climate for minorities here. Travel funds have been solicited to support visits by minority applicants. Individual contact with prospective minority applicants has been made through current minority students who have brought in applicants from their baccalaureate institutions, through a minority application network, and through minority alumni who have made personal contact with prospective applicants.

In spite of these efforts the Department was not able to enroll many minority students, primarily because we were not able to meet financial offers made by other universities. Most of our qualified minority applicants were from out of state, and therefore not eligible for Minority Presence funding.

8. Significant Achievements of Majors.

Honors:

Named to Delta Omega, Theta Chapter: W. Eugene Broadhead, Russell P. Harris, Jeffrey L. Johnson, Paige E. Perry, Beatrice Rouse (alumna)

Dissertations Completed:

Marshall, Elizabeth G.: "A Pilot Study of Pesticide Exposure among North Carolina Farm Workers". August, 1986

Broadhead, W. Eugene: "Measurement of Social Supports and Quantification of their Effects on Health Care Utilization: A Study of Family Medicine Patients". May, 1987

Houseknecht, Robert A.: "Pleural Mesothelioma in Tidewater, Virginia". May, 1987

Strayhorn, Gregory: "Environmental Stressors, Social Support, Coping, Environmental Mastery and Health". May, 1987

White, Alice D.: "The Relationship of Socioeconomic Status to Prognosis in Coronary Catheterization Patients". May, 1987

Grants Awarded For Student Projects:

Coker, Ann: The Role of Human Papillomavirus in Cervical Neoplasia. National Cancer Institute, 7/1/87-6/30/88, \$44,999.

Publications or Presentations by Students:

Studenski, Stephanie A., MD

Invited Speaker - American Geriatric Society Annual Meeting, November 1986

Gerrity, Martha S. MD.

Publication: Danis M, Gerrity MS, Southerland LI, Patrick DL: A Comparison of Patient, Family, and Physician Assessments of the Value of Medical Intensive Care. Critical Care Medicine 1987;15(2):138-43.

Roeback, John

Presentation: "Modification of Iatrogenic Risk of Beta Blockers on Protective HDL Cholesterol Using Low Toxicity Chromium Supplementation." Presented to Joint Research Conference for Health Services Research and Development, VA, Medical Center, Division of General Internal Medicine, Duke University, 12/17/86

Abstract: "The Effects of Body Inversion on Left Ventricular Function". Medicine and Science in Sports and Exercise 1987;19:S41

Presentation: "The Effects of Body Inversion on Left Ventricular Function". Presented at Annual Meeting of American College of Sports Medicine, Las Vegas, 5/28/87

Coker, Ann

Presentation: "The Role of Human Papillomavirus in Cervical Neoplasia". Presented at Student Presentation Workshop, SER, 6/16/87

C. Enrollment.

1. Number of Graduate Students by:

a. <u>Degree</u>	<u>Fall 1986</u>	<u>Spring 1987</u>
PhD	37	36
MPH	32	31
MSPH	17	16
b. <u>Race-Minority Status</u>		
Black Male	1	1
Black Female	3	3
White Male	35	32
White Female	35	37
Foreign Male	5	5
Foreign Female	5	3
Asian Male	1	1
American Indian Female	1	1
c. <u>In-State Residency</u>	39	38
d. <u>Out-of-State Residency</u>	37	37
e. <u>Foreign Students</u>	10	8

2. Number of Degrees Awarded:

	<u>PhD</u>	<u>MPH</u>	<u>MSPH</u>
August 1986	1	11	4
December 1986	0	4	1
May 1987	4	2	2

III. RESEARCH PROGRAMS

A. Research Programs in Operation during the Year.

BIOLOGICAL MARKERS IN EPIDEMIOLOGIC RESEARCH

Research Program in Biochemical Markers. This program is a cooperative agreement with the Environmental Protection Agency to determine the role of biochemical markers in epidemiologic studies through a sequence of four interrelated phases. The first phase of the five year agreement will produce

a monograph that presents a detailed overview of biochemical markers as they relate to use in epidemiologic studies: the monograph will enable epidemiologists to identify markers and assays that will help meet their research needs. The planned series of studies will provide a comprehensive ~~assessment~~ of biochemical markers with respect to epidemiologic studies, and the results will facilitate the use of these promising tools for addressing important public health issues. (Hulka, Wilcosky, Savitz.)

#### CANCER EPIDEMIOLOGY

Atypical Metaplasia as a Risk Factor for Lung Cancer. The purpose of this investigation is to study the natural history of lung cancer. Data collected through the National Cancer Institute's Cooperative Early Lung Cancer Detection Program and released on tape to the Department for use in this investigation will be analyzed to establish and quantitate the extent to which atypical squamous metaplasia (mild, moderate, and marked) predicts lung cancer development.

As part of the Program, 15,000 smokers free of lung cancer at the start of the study were followed for the development of the disease over a 12 year period. Sputum cytology specimens were collected every four months during a five-year period. Information concerning potential confounding factors including age, race, occupational exposures to lung carcinogens, and smoking habits were obtained on questionnaires completed at the start of the study and at four month intervals. Poisson regression and proportional hazards modeling will be employed to determine whether degree of metaplastic atypia (particularly mild atypia) as detected by sputum cytology is associated with the risk of developing lung cancer, and whether changes in smoking habits (quitting or reducing consumption) affect progression and regression in degree of atypical metaplasia.

Currently, the clinical significance of metaplastic atypias uncertain, especially for mild atypias which are believed to be reversible. If degree of metaplastic atypia can be shown to be predictive of lung cancer development, a subset of smokers can be identified as having a higher than average risk of developing the disease. While smoking prevention and cessation are the primary strategies for the prevention of lung cancer, identification of smokers at particularly high risk could create new prevention opportunities by focusing antismoking efforts and enhancing motivation to quit smoking, and by providing target groups for screening and chemoprevention research. (Hulka, Vine)

Eliciting Past Hormone Use by Telephone Interview via Two Different Methods of Random Digit Dialing: A Pilot Study. This pilot study will evaluate two methodological aspects of a case-control study of endometrial cancer. Firstly, a method of enhancing the recall by post-menopausal women of prior hormone therapy, using a pictorial display of the common estrogen and progestin pills, will be developed. Secondly, the study will compare two methods of random digit dialing for selection of controls. Fifty index numbers will be sampled from the most recent telephone directory to act as dummy cases. Two controls per case will be selected. The methods will be compared on number of calls required and total number of potential controls. (Beresford)

Training Grant in Cancer Epidemiology. The objective of this training program is to equip health professionals with epidemiologic and quantitative skills, such that upon completion of the program they may assume leadership roles in both cancer research and cancer control programs. The various types of cancer, their causative factors and the methods used in developing and substantiating new etiologic hypotheses provide the model for study of cancer epidemiology. The focus for this program has three components: 1) To integrate knowledge from epidemiology, clinical practice and the basic sciences about specific types of cancer; 2) To synthesize information on the carcinogenic potential and mechanisms of action of known classes of carcinogens, exogenous and endogenous; 3) to emphasize those methods in epidemiology which are particularly relevant to the study of cancer and other chronic diseases. Students will be provided with this informational base and they will be assisted in developing research skills to formulate meaningful hypotheses and design feasible studies which they themselves can execute. The approach will be to formulate an individualized curriculum for students who have the interest and potential to be innovative thinkers and thorough researchers. The intent is to produce cancer epidemiologists who can assume leadership roles in epidemiologic studies, and provide knowledgeable, consultative support to multidisciplinary cancer research with a primary focus in areas other than epidemiology. (Hulka, Beresford, Sandler, Schoenbach, Shy,)

Hormone Receptors and Serum Assays in Prostatic Cancer. The etiology of prostate cancer is poorly understood, despite the fact that it is the second most common cancer among United States males. The importance of gonadal hormones on prostate growth regulation has suggested an obvious direction for inquiry; however, the nature of the association between gonadal hormones and prostate cancer risk has yet to be specified, as evidenced by conflicting findings reported in the literature. It is proposed to develop a reliable autoradiographic assay for measuring levels of steroid hormone receptor content in normal, malignant and benign hyperplastic prostate tissue. The autoradiographic assay will be validated against existing biochemical techniques in animal tissue. A comparative pilot study on 20 patients with newly diagnosed prostatic adenocarcinoma and 20



patients with newly diagnosed benign prostatic hyperplasia will provide descriptive data on hormone receptor distributions, by age and race. Additionally, serum levels of testosterone, 17-beta-estradiol and prolactin will be measured and correlated with autoradiographically determined measurements of hormone receptor activity. The findings from this study will be used subsequently in the planning and conduct of multi-center case-control study of the associations between serum hormone levels, tissue receptor activity and risk for prostatic cancer in whites and blacks. (Hulka, Checkoway).

The Role of Human Papillomavirus in Cervical Neoplasia. The purpose of this case control study is to investigate the role Human Papillomavirus (HPV) DNA types 6, 11, 16, 18, and 31 play in the development of cervical intraepithelial neoplasia (CIN) levels II and III, controlling for known and suspected risk factors, HPV DNA types 16, 18, and 31 have been found to be associated with CIN II and III, while HPV DNA types 6 and 11 are found more frequently in CIN I. This research project hypothesizes that women with CIN II and III are more likely to have HPV DNA types 16, 18, and 31 compared to women with normal cervical smears. Since HPV usually requires an associated carcinogenic agent for malignant transformation in animal tumor models, the role of past genital herpes infection, smoking, and hormonal contraceptives will be evaluated as possible co-carcinogens.

The North Carolina Memorial Hospital (NCMH) Neoplasia Clinic will serve as the source of 100 incident cases of CIN II and III as classified by the NCMH cytology laboratory. Biopsy confirmation of CIN II or III will also be a requirement for case status. Two hundred NCMH Family Medicine Clinic patients receiving routine Pap smears, classified as normal by the NCMH cytology laboratory, will serve as the controls. An additional cervical scraping will be taken from each case and control for HPV DNA typing. All cases and controls will be interviewed by telephone to collect information on potential confounders including: age, race, education, age at first intercourse, number of sexual partners, tobacco use, history of sexually transmitted diseases, and contraceptive methods used.

Stratified analysis and unconditional logistic regression will be used to investigate the relationship between HPV DNA types and cervical neoplasia status, while controlling for risk factors. The possibility of interactions between HPV DNA types and the hypothesized co-carcinogenic agents (past genital herpes infection, smoking status, and hormonal contraceptives used) will be evaluated using unconditional logistic regression. (Hulka, Coker)

Cigarette Smoking, Alcohol Consumption and Breast Cancer. The effects of cigarette smoking and alcohol consumption on breast cancer risk were investigated in 276 primary, histologically confirmed breast cancer patients and 1519 community-based comparison subjects identified in 1977 and 1978. Information on cigarette smoking history, alcohol consumption, and other pertinent personal and medical characteristics was obtained from each study subject by questionnaire. Compared to women who reported to have never smoked, current smokers were at decreased risk of breast cancer. After adjusting for age, race, estrogen use, oral contraceptive use, and alcohol intake, the relative risks were 0.75 (95 percent CI, 0.52-1.09) in current smoker of 1-20 cigarettes per day and 0.57 (95 percent CI, 0.30-1.08) in those who smoke more than 20 cigarettes per day. A decrease in risk was not seen in former smokers (RR=1.16, 95 percent CI, 0.80-1.69). The relationship between alcohol consumption and breast cancer is more complex due to the presence of significant effect modifiers. In particular, the risk of breast cancer in women who have one or more alcoholic drinks per week as compared to those who drink less or none was increased for whites, premenopausal women and those with previous gall bladder disease. The crude odds ratio for alcohol consumption was 1.19. (Hulka, O'Connell, Chambless, Deubner, Wilkinson)

The Influence of Exogenous Estrogen Use on Survival After Diagnosis of Endometrial Cancer. To examine the effect of prior exogenous estrogen use on survival after diagnosis of endometrial cancer, 244 endometrial cancer cases identified between 1970 and 1976 were followed until 1982. The authors defined an estrogen user as a woman who took exogenous estrogen prior to diagnosis for at least six months. Estrogen users (N=46) were younger, had less advanced disease, were more likely to be non-obese and white than were non-users (N=198). The estimated probability of surviving (Kaplan-Meier) 5 years after diagnosis was .89 for users and .53 for non-users. When adjusted for stage, grade, age, race, and obesity (using the Cox proportional hazards regression model), the survival probabilities for estrogen users continued to be higher ( $X^2=4.04$ ,  $p=.04$ ). The adjusted "risk" of death from all causes per unit time (Hazard ratio) for a non-user was 2.20 (1.02, 4.65) times that for an estrogen user. The adjusted risk of death per unit time from endometrial cancer only (N=80) was 4.29 (1.31, 14.09) times greater among estrogen non-users. The investigators observed no difference in the adjusted risk of death from causes other than endometrial cancer (N=35) per unit time between estrogen users and non-users. The more frequent occurrence of endometrial cancer in an earlier stage and grade among estrogen users is not the sole cause of their lower risk of death per unit time from this disease. (Hulka, Schwartzbaum, Fowler, Kaufman, Greenberg)

## CARDIOVASCULAR DISEASE EPIDEMIOLOGY

Atherosclerosis Risk in Communities Study. The Atherosclerosis Risk in Communities Study (ARIC) is a prospective study in four United States communities to: (1) investigate the natural history of atherosclerosis, (2) investigate the etiology of clinical atherosclerotic diseases and (3) measure variation in cardiovascular risk factors, medical care and disease by race, sex, place and time.

The ARIC study incorporates two distinct design features, a Cohort Component and a Community Surveillance Component. The two arms of the study enhance the informativeness of the study as a whole. The Community Surveillance Component facilitates the generalizability of the Cohort findings and the Cohort Component validates the community profile of cardiovascular disease and of medical care characteristics obtained from Community Surveillance.

For the cohort component, a random sample of 16,000 persons, age 45-64 years, is selected from the four communities. Cohort members participate in two examinations three years apart and annual follow-up interviews. The examinations involve measuring major cardiovascular risk factors by interview, a physical examination, electrocardiography, blood lipid, hemostasis and non-invasive assessment of atherosclerosis by ultrasound imaging.

In the community surveillance component, the occurrence of hospitalized myocardial infarction and coronary heart disease death is ascertained for all residents of the four communities ages 35-74 years. Event investigation includes review of hospital records and query of physicians and family members.

The Department of Epidemiology in collaboration with the Bowman Gray School of Medicine, will study the randomly selected residents in Forsyth County, North Carolina, area. An Ultrasound Reading Center is also a component of the North Carolina ARIC study. (Heiss, Tyroler).

Evans County Cardiovascular Studies. The Evans County Study is a biracial epidemiologic study of cardiovascular disease in a total community. Initiated in 1960, attempts were made to enroll all of the residents over 40 years of age and a random sample of those between 15 and 39 years of age in a longitudinal study which would span two decades. The study was designed to test an observation made by a primary care physician in his practice, i.e., the rarity of manifestations of coronary heart disease (CHD) in black patients, particularly males, despite markedly elevated blood pressure levels. The major result of this study was the delineation of risk factors for CHD. Numerous publications, dissertations, and theses have resulted from analyses of data derived from this study. Current analyses include studies of the black-white differences in mortality and relationship

of total lipids, lipoprotein cholesterol and lipoprotein apoproteins to twenty year mortality. (Tyroler, Heiss)

Lipid Research Clinics Program (LRC Program). An international study of the epidemiology of lipoproteins and coronary heart disease involving prevalence, family studies, follow-up mortality studies and a large collaborative Coronary Primary Prevention Trial (CPPT). The CPPT results were positive and were published in January 1984, indicating a 20 percent reduction in CHD incidence by cholesterol lowering. Study results to date include population based distributions of lipids and lipoprotein-cholesterol fractions, and the use of ethnicity, education, occupation, and sex-hormone usage on the population levels of these parameters. (Tyroler, Heiss)

Geographic and Temporal Variation in Mortality, and Development of Health Indices, in Relation to Environmental Quality. This is a Cooperative Agreement between the University of North Carolina Department of Epidemiology and the US Environmental Protection Agency. The primary goals of this Cooperative Agreement are to study geographic and temporal variation in non-cancer disease mortality and the health effects of selected environmental exposures including the cardiovascular sequelae of low dose exposure to lead. The Cooperative Agreement provides students in the Department of Epidemiology the opportunity to participate as Graduate Research Assistants. (Tyroler, Heiss)

Predictors of Coronary Disease in Blacks (The Charleston Heart Study). This is a subcontract with the University of South Carolina Medical School to examine the role of isolated systolic hypertension and other predictors of all cause and coronary heart disease survival in blacks and whites of the 1960 Charleston Heart Study and the 1960 Evans County Georgia Heart Study. The findings of both studies will be pooled together in order to identify predictors of physical functioning in older blacks and whites and to prepare rosters of the off-spring of the Charleston Cohort for future studies investigating genetic/familial influences on cardiovascular disease. This investigation will make important contributions applicable to treatment and prevention of cardiovascular disease by identifying the role of isolated systolic hypertension and other factors in the onset of cardiovascular disease, the race specific risk factors for coronary heart disease and the racial differences in manifestations of coronary heart disease. (Tyroler)

Psychosocial Factors Related to the Risk and Control of High Blood Pressure Among Black Men. This is a study of the influence of psychosocial factors on mean blood pressure levels (and on hypertension related health behaviors) on a probability sample of 132 black men (ages 17-60 residing in a rural, poor, eastern North Carolina town. Data collection was preceded by an eight week participant-observation study of men in the area. The community survey was conducted from November 1980 to

February 1981. Several papers based on this work have been submitted for publication; one is "in press," and others are being written. The central focus of this work is the contribution that "John Henryism" (a measure of perceived control over the environment) makes to 1) predicting mean blood pressures of black men, and 2) explaining differences among them in hypertension-related health behaviors. This research was made possible by a grant from the Robert Wood Johnson Foundation and an NHLBI Research Career Development Award (1982-87). Future studies of John Henryism and risk of cardiovascular disease among white, female, and non-working class black populations are underway. (James).

SES, John Henryism and Hypertension--Risk in Blacks (1987-1990). This NIH funded study will investigate psychosocial and dietary influences on blood pressure in a community probability sample of 25-50 year old Black men and women residing in Pitt County, North Carolina. The psychosocial variables of greatest interest include socioeconomic status (SES), John Henryism, social support and anger-coping style. The dietary variables of greatest interest include sodium, potassium, calcium and alcohol. The major objective of the study is to identify those factors which make an important and statistically significant contribution to increased levels of blood pressure in low SES Blacks. Prior work by our group has implicated both high John Henryism (a strong behavioral predisposition to cope actively with psychosocial environmental stressors) and low social support (especially instrumental support), as potentially important modifiers of the SES/blood pressure relationship in young and early middle-aged Blacks. The study will seek to confirm these associations in a more economically diverse Black population. In addition, the study will assess to what degree habitual anger suppression as well as selected dietary factors (sodium, potassium, etc.) are associated with blood pressure and, more specifically, influence the SES/blood pressure relationship in Blacks. Sample size permitting, the expected SES x John Henryism interaction on blood pressure will be re-examined after stratifying for social support, anger-coping style, and diet.

The above research questions will be tested cross-sectionally, with blood pressure and a continuous outcome and linear regression as the multivariable analytic technique. However, the sample will be selected so as to provide a sufficient number of normotensive individuals for a prospective test of SES, John Henryism, and changes in blood pressure over a three year follow-up. Support for this longitudinal component will be sought in the final year of this project. The long-term objective is to develop explanatory public health models for elevated blood pressure in Blacks that can also be used to design effective primary prevention programs for members of this population. (James, Strogatz)

Cardiovascular Epidemiology. This research training program provides course work leading to the degree of Doctor of Philosophy in epidemiology by combining the strong, accredited academic curricula of both the Departments of Epidemiology and Biostatistics with the population and clinical resources required for intensive research training in cardiovascular disease. Programs of study are designed to meet the needs, capabilities and interests of the individual trainees. In addition to offering core and supplemental courses leading to competency in the general disciplines of epidemiology, the Department of Epidemiology has developed a formal, two course sequence in Cardiovascular Disease Epidemiology, which is required for students funded by this grant. The course sequence is designed to elucidate the theoretical and methodological issues relevant to cardiovascular disease epidemiology, and to enable the students to develop research competency in this field. The program will maintain this focus, providing pre-doctoral experience in cardiovascular disease research. Research training will continue to be accomplished through lectures, seminars, and directed research in specific areas crucial to the investigation of cardiovascular disease. Such concerns as genetic analysis, clinical trials, laboratory standardization and quality control, data management systems, field studies, evaluation of nutrition data, and theoretical epidemiologic and biostatistics research continue to be relevant to the program. (Tyroler, Heiss, Ibrahim)

#### OCCUPATIONAL and ENVIRONMENTAL EPIDEMIOLOGY

Epidemiology Study of Cancer Risks in US Atomic Workers. The main objective of this study is to identify the long term effects of low-dose occupational radiation exposures to determine whether occupational radiation exposure standards have allowed the accumulation of detrimental effects of radiation. Sponsored by the US Department of Energy, this study is being conducted in collaboration with the Oak Ridge Associated Universities (Oak Ridge, Tennessee) with other participating faculty from the Departments of Biostatistics and Environmental Sciences and Engineering. This research design involves mortality studies of large cohorts of workers employed in nuclear facilities and also case-control studies designed to determine the effect of confounding variables, including sources of medical radiation and chemical carcinogens. (Shy, Checkoway)

Mortality Study of Radiation-Exposed Workers. Three sub-projects (see above) underway are a mortality study of 8000 workers from the Oak Ridge National Laboratory (ORNL); a case-control study of hematologic malignancies among workers at several nuclear facilities in Oak Ridge, TN; and a cohort mortality study of roughly 6000 workers at a weapons manufacturing facility where uranium is the principal exposure. Preliminary results from the ORNL study indicate modest mortality excesses of leukemia, prostate cancer, and Hodgkin's disease; however, none was specifically related to radiation exposure. Analysis are being pursued further. The case-control study has only recently begun, and no results are yet available (Checkoway).

Occupational Cancer in Workers Exposed to Silica and Asbestos in the North Carolina Dusty Trades. The purpose of this research is: (1) to test the hypothesis that occupational exposure to silica is a risk factor for lung cancer, (2) to define the slope of the dose-response relationship between asbestos exposure among asbestos textile workers and lung cancer, and (3) to quantify the relationship between silica exposure and risk of silicosis. Seven subprojects will be carried out to achieve the objectives of this research: (a) retrospective cohort mortality and case-control study of the association between lung cancer mortality and silica exposure in workers employed since 1974; (b) retrospective cohort mortality study and nested case-control study of workers in North Carolina asbestos textile plants; (c) retrospective cohort follow-up study of the mortality of silicotics and asbestotics; (d) characterization of silica exposure at mines and facilities in the North Carolina dusty trades. Reconstruction of workers' exposures to respirable quartz; (e) case-control study of silicotics; (f) comparison of the classification of silicosis from miniature and standard chest radiographs; (g) follow-up of silicosis progression in workers who left the North Carolina dusty trades industry. The project is a cooperative agreement between the University of North Carolina at Chapel Hill, the National Institute of Occupational Safety and Health, and the National Cancer Institute. While the UNC group is largely responsible for collection and editing of the basic data set, analysis responsibilities will be divided between the three institutions. (Shy, Checkoway)

Air Toxics Panel. At the request of the North Carolina Academy of Sciences an Air Toxics Panel was formed to review the list of substances proposed for regulation as toxic air pollutants and to recommend a suitable approach for determining acceptable ambient level for these pollutants. After reviewing the experience of nineteen states which had air toxics control programs in place, the panel made the following recommendations: (1) develop air guidelines for those chemicals to which there is potential for exposures that may lead to adverse effects as a result of industrial emissions in North Carolina; (2) potentially toxic chemicals chosen for the list of toxic air pollutants should be categorized by type of toxicity based on adverse effects at near ambient levels; (3) recommendation of a factored TLV approach to develop acceptable ambient levels for acute irritants, acute systemic toxicants and chronic toxicants; (4) recommendation of a combined technology-based and risk assessment approach; (5) the Panel also proposes the establishment of a Standing Advisory Committee on Toxic Air Pollutants to deal with recurrent or unresolved issues, to review the application of these recommended criteria to any chemical selected for inclusion in the list of toxic air pollutants, to consider any modifications in recommended action levels for carcinogens, to consider whether air guidelines should be modified when there are multiple emission sources in the same localized area, and to assist the State in reviewing variance requests.  
(Shy)

An Epidemiologic Study of Cancer and Drinking Water Quality. The aim of this study is to evaluate the relationship between drinking water quality and cancer in communities using water from the lower Haw or upper Cape Fear Rivers. It is being initiated to follow up a report by Osborne which showed a much greater increase in proportionate cancer mortality for Bynum, North Carolina, between 1947 and 1985, than for the state as a whole. Concern over a relationship between drinking water obtained from the Haw River and this cancer increase has been expressed by Bynum residents and others. In order to examine the water/cancer relationship, two epidemiologic studies have been proposed. The first investigates proportionate mortality in other communities that have obtained drinking water from the lower Haw or upper Cape Fear Rivers (the Haw is a major tributary of the Cape Fear) to determine whether any increase in cancer mortality has occurred. Concurrently, a case-control study will be conducted in Bynum to assess the relationship between drinking water and cancer when other factors such as smoking and occupation are controlled for. Interviews will be used to obtain information on suspected risk factors from incident cases and their controls or from next-of-kin. An analysis of chemical contamination of Bynum water will be undertaken. Some reconstruction of potential exposure to past pollutants and to chlorination byproducts will be attempted. (Shy)

#### REPRODUCTIVE EPIDEMIOLOGY

Case-Control Study of Childhood Cancer and Exposure to Electromagnetic Fields. This study was funded by the New York State Department of Health and concerns a possible relationship between exposure to electromagnetic fields in homes in relation to the risk of childhood cancer, as reflected by in-home measurements and wire configuration coding. Approximately 250 cases (of all types of childhood cancer) and 220 controls were interviewed. Results suggest an association between cancer risk and occupancy in a "high wiring configuration" home, suggestive of an effect from persistent low-level magnetic fields. Analyses of other possible determinants of childhood cancer (maternal smoking, parental occupational exposures, medications) is in progress. (Savitz).

Association of Parental Occupational Exposure with Late Fetal Mortality and Low Birth Weight. This study, funded by the March of Dimes, involves analyzing data from the 1980 National Natality and Fetal Mortality Surveys. Job titles of mothers and fathers were linked to exposures and the relationship between those exposures and risk of stillbirth, preterm delivery, and low birth weight was evaluated. A variety of chemical and physical agents in the workplace can be screened in this manner to pinpoint those deserving more detailed study. (Savitz).



Epidemiologic Study of Leukemia among Electric Utility Workers. A study of cancer risks in relation to electromagnetic field exposures was recently begun with the support of the Electric Power Research Institute. The concern is with the possible cancer promoting effect of prolonged exposure to elevated levels of 60 Hertz magnetic fields. In the first phase, candidate utilities will be identified, job-exposure matrices will be developed, and plans will be made for a large cohort mortality study. Nested case-control studies will address leukemia and brain cancer risks. (Savitz).

#### OTHER

Effectiveness of Self-help Smoking Cessation Strategies. Three promising self-help approaches to smoking cessation, developed during the first year of the project, are being evaluated in a randomized controlled trial among 2,000 enrollees of Group Health Cooperative of Puget Sound, a major health maintenance organization based in Seattle, Washington. (Schoenbach, Brooks, Kaplan, Quade)

A Self-help Quit-Smoking Program for Black Americans. We propose to develop a replicable, mediated self-help smoking cessation intervention oriented toward Black smokers wanting to quit and to test its effectiveness among 2,400 Black individual policyholders of North Carolina Mutual Life Insurance Company (NC Mutual), the largest Black-owned business enterprise in the US. The intervention will feature a new, well-illustrated, easy-to-read quit-smoking manual, incorporating nicotine-fading, nonsmoking skills training, and materials to bolster natural support for quitting. The four-part manual will be presented in four home visits by NC Mutual sales agents, who will receive a short, standardized training session to generate interest and promote participation. Compliance incentives and reinforcements will be employed. A trained quit-smoking counselor will be available by means of an 800-number at NC Mutual to provide needed professional assistance to quitters. (Schoenbach, Brooks, Kaplan, Kalsbeek, Quade, Strecher)

#### B. Research and Training Funds Received during the Year. [Title; Termination Date (P.L.)]

Effectiveness of Self-Help Smoking Cessation Strategies; 06/30/89 (Schoenbach).

"A Self-Help Quit Smoking Program for Black Americans"; 06/30/88 (Schoenbach).

Atypical Metaplasia as a Risk Factor for Lung Cancer; 09/29/87 (Hulka)

John Henryism and Hypertension Risk: Race and Gender Influences; 11/30/87 (James)

Biomedical Research Support Grant; 03/31/87 (Checkoway, Marshall)

Atherosclerosis Risk in Communities; 08/31/93 (Heiss)

Geographic and Temporal Variation in Mortality, and Development of Health Indices in Relation to Environmental Quality; 05/31/87 (Tyroler).

Research Program in Biochemical Epidemiology; 09/30/91 (Hulka)

Dusty Trades: Occupational Cancer - Silica & Asbestos; 08/31/90 (Shy)

Cardiovascular Epidemiology; 06/30/91 (Tyroler)

Psychosocial Factors Related to Risk and Control of HBP among Black Men; 6/30/88 (James).

Cancer Epidemiology Training Grant; 08/31/90 (Hulka).

Eliciting Past Hormone Use by Phone Interview; 06/30/87 (Beresford)

Oak Ridge: Comprehensive Epidemiology of DOE Atomic Workers; 9/30/87 (Shy).

Epidemiological Study of Cancer & Drinking Water Quality; 09/15/87 (Shy)

University Faculty Research Grant; 04/30/88 (Strogatz)

University Faculty Research Grant; 11/30/88 (Savitz)

Association of Parental Occupational Exposures with late Fetal Mortality; 11/30/87 (Savitz)

Childhood Cancer Study; 08/31/86 (Savitz)

Predictors of IHD in Blacks (Charleston Heart Study); 12/31/86 (Tyroler).

C. Notable Publications of Faculty.

**Caroline Becker**

"Community Hospital-Based Stroke Programs: North Carolina, Oregon, and New York. I. Goals, Objectives, and Data collection Procedures." F.M. Yatsu, C. Becker, K.R. McLeRoy, B. Coull, J. Feibel, G. Howard, J.F. Toole and M.D. Walker. Stroke 17:276-284, 1986.

"Community Hospital-Based Stroke Programs: North Carolina, Oregon, and New York. II. Description of Study Population." C. Becker, G. Howard, K.R. McLeRoy, F.M. Yatus, J.F. Toole, B. Coull, J. Feibel and M.D. Walker. Stroke 17:285-293, 1986.

"Community Hospital Based-Stroke Programs: North Carolina, Oregon, and New York. III. Factors Influencing Survival After Stroke: Proportional Hazards Analysis of 4219 Patients." G. Howard, M.D. Walker, C. Becker, B. Coull, J. Feibel, K. McLeRoy, J.F. Toole, and F. Yatsu. Stroke 17:294-299, 1986.

"Evaluation of the North Carolina Stroke Care Program." M.B. Dignan, G. Howard, J.F. Toole, C. Becker and K.R. McLeRoy. Stroke 17:382-386, 1986.

### **Shirley Beresford**

Beresford, S.A.A. (1986) "Epidemiologic assessment of health risks associated with organic micropollutants in drinking water." In Ram, N.M., Calabrese, E.J., Christman, R.F. (eds) Organic carcinogens in drinking water: detection, treatment and risk assessment. New York, Wiley, pp.373-404.

Siscovick, D.D., Strogatz, D.S., Wagner, E.H., Ballard, D.J., James, S.A., Beresford, S.A.A., Kleinbaum, D.G., Cutchin, L.M., Ibrahim, M.A. (1987) "Provider-oriented interventions and management of hypertension." Medical Care 25 (3) 254-258

### **Gerardo Heiss**

Rubenstein, C., Romhilt, D., Segal, P., Heiss, G., Chambless, L.E., Boyle, K.E., Ekelund, L.R., Adolph, R., Sheffield, L.T., Dyslipoproteinemias and coronary heart disease manifestations. Circulation 73 (Suppl I):91-99, 1986.

Pomrehn, P., Duncan, B., Weissfeld, L., Wallace, R.B., Barnes, R., Heiss, G., Ekelund, L.R., Criqui, M.H., Johnson, N., Chambless, L.E. The association of dyslipoproteinemia with symptoms and signs of peripheral arterial disease. Circulation 73 (Suppl I)100-107, 1986.

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Kaufman, N.A., Dennis, B.H., Heiss, G., Friedlander, Y., Kark, J.D., Stein, Y. Comparison of nutrient intake of selected populations in the United States and Israel. The Lipid Research Clinic Prevalence Study. American Journal of Clinical Nutrition 43:604-620, 1986.

Walden, C., Knopp, R.H., Johnson, J.L., Heiss, G., Wahl, P.W., Hoover, J.J. Effect of estrogen/progestin potency on clinical chemistry measures: The Lipid Research Clinics Program Prevalence Study. American Journal of Epidemiology 123(3):517-531, 1986.

Knopp, R.H., Walden, C.E., Heiss, G., Johnson, J.L., Wahl, P.W. Prevalence and clinical correlates of beta-migrating VLDL. The Lipid Research Clinics Program Prevalence Study. American Journal of Medicine 81:493-502, 1986.

Wallace, R.B., Heiss, G., Burrows, B., Graves, K. Contrasting diet and body mass among users and non-users of oral contraceptives and exogenous estrogens: The Lipid Research Clinics Program Prevalence Study. American Journal of Epidemiology 125(5):854-9, 1987.

**Barbara S. Hulka**

O'Connell, D.L., Hulka, B.S., Chambless, L.L., Wilkinson, W.E., Deubner, E.C. "Cigarette Smoking, Alcohol Consumption and Breast Cancer Risk." Journal of the National Cancer Institute. 78(2):229-234, 1987.

Hulka, B.S. "The Epidemiology of Breast Cancer (Breast Series). Contemporary Ob/Gyn 29(4):91-111, 1987.

Checkoway, H., DiFerdinando, G., Hulka, B.S., Mickey, D.D. Medical, Lifestyle and Occupational Risk Factors for Prostate Cancer. The Prostate 10:79-88, 1987.

Hulka, B.S., Beckman, W.C., Checkoway, H., DiFerdinando, G., Hammond, J.E., Fried, F.A., Mickey, D.D., Stumpf, W.E., Clark, T.D. Androgen Receptors Detected by Autoradiography in Prostatic Carcinoma and Benign Prostatic Hyperplastic Tissue. The Prostate 10(3):223-233, 1987.

Committee on Passive Smoking (B.S. Hulka, Chair), Board on Environmental Studies and Toxicology, National Research Council. Environmental Tobacco Smoke: Measuring Exposures and Assessing Health Effects. National Academy Press, Washington DC, 1986.

**Sherman A. James**

James, S.A.: Infant Mortality and Child Survival in Bahia, Brazil: A Socio-Epidemiological Review (Submitted).

Light, K.C., Obrist, P.A., Sherwood, A., James, S.A., Strogatz, D.S. Effects of Race and Marginally Elevated Blood Pressure on Cardiovascular Responses to Stress in Young Men. Hypertension, In press.

Siscovick, D.S., Strogatz, D.S., Wagner, E.H., Ballard, D.J., James, S.A., Beresford, S.A.A., Kleinbaum, D.G., Cutchin, L.M., Ibrahim, M.A. Provider-Oriented Interventions and the Management of Hypertension. Medical Care, 1987, 25:254-258.

James, S.A., Strogatz, D.S., Wing, S.B., Ramsey, D.L. Socioeconomic Status, John Henryism, and Hypertension in Blacks and Whites. American Journal of Epidemiology, In press.

James, S.A., Almeida, N. Hypertension in Brazil: A Review of the Epidemiological Evidence (Submitted).

#### **Berton H. Kaplan**

Kaplan, B.H., Blazer, D.G.: Psychiatric Epidemiology, A Review in Psychiatry and the Behavioral Sciences. D. Hamburg, J. Barchas, and P. Berger, (Eds), Oxford University Press, expected publication date 1987.

Kaplan, B.H. and Blazer, D.G., "Religion in the Stress and Adaptation Paradigm" in Research Directions in Socio-Physiology and Stress Research, Oxford University Press, expected publication date 1987.

Garrison, C.Z., Schoenbach, V.J., Kaplan, B.H., Schluchter, M.D., "Utilization of a Self Report Symptom Scale to Study the Epidemiology of Depressive Symptomatology in Early Adolescents," Submitted for publication 1987.

#### **David A. Savitz**

Savitz, D.A. Changes in spanish surname cancer rates relative to other Whites in the Denver area. American Journal of Public Health 1986; 76:1210-1215.

Brinton, L.A., Schairer, C., Haenszel, W., Stolley, P., Lehman, H.F., Levine, R., and Savitz, D.A. Smoking and invasive cervical cancer. Journal of the American Medical Association 1986; 255:3265-3269.

Savitz, D.A., Hamman, R.F., Grace, C., and Stroo, K. Respondents' attitudes regarding participation in an epidemiologic study. American Journal of Epidemiology 1986; 123:363-366.

Alderman, B.A., Baron, A.E., and Savitz, D.A. Maternal exposure to neighborhood carbon monoxide and risk of low infant birth weight. Public Health Reports, in press.

Savitz, D.A., and Zuckerman, D.L. Childhood cancer in the Denver metropolitan area, 1976-83. Cancer 1987; 59:1539-1542.

Brinton, L.A., Huggins, G.R., Lehman, H.F., Mallin, K., Savitz, D.A., Trapido, E., Rosenthal, J., and Hoover, R. Long-term use of oral contraceptives and risk of invasive cervical cancer. International Journal of Cancer 1986; 38:399-404.

Savitz, D.A. Human health effects of extremely low frequency electromagnetic fields: critical review of clinical and epidemiological studies. IEEE Publication, 1986.

Savitz, D.A. Childhood cancer. In Z.A. Stein, M.C. Hatch (eds.), Reproductive Problems in the Workplace, pp. 415-429. Philadelphia: Hanley & Belfis, 1986.

#### **Victor J. Schoenbach**

Schoenbach, V.J. Appraising Health Risk Appraisal. Editorial. American Journal of Public Health 1987; 77:409-411.

#### **Carl M. Shy**

Goldsmith, D.F., Winn, D.M., Shy, C.M., eds. Silica, Silicosis, and Cancer. Praeger, New York, 1986.

Shy, C.M. and McGaghie, W.C. Planning a Research Study. Chapter in Handbook for the Academic Physician. W.C. McGaghie and J.J. Frey, eds., Springer-Verlag New York, Inc., pp. 205-216, 1986.

Pearce, N., Checkoway, H. and Shy, C.M. Time-related factors as potential confounders and effect modifiers in studies based on an occupational cohort. Scand J Work Environ Health 12:97-107, 1986.

#### **David S. Strogatz**

Strogatz, D.S., James, S.A. Social Support and Hypertension Among Blacks and Whites in a Rural Southern Community. American Journal of Epidemiology, 1986; 124:949-956.

Strogatz, D.S., Tyroler, H.A., Watkins, L.O., Hames, C.G. Electrocardiographic abnormalities and Mortality Among Middle-Aged Black Men and White Men of Evans County, Georgia. Journal of Chronic Diseases, 1987; 40:149-155.

Obrist, P.A., Light, K.C., James, S.A., Strogatz, D.S. Cardiovascular Responses to Stress: Measures of Myocardial Response and Relationships to High Resting Systolic Pressure and Parental Hypertension. Psychophysiology, 1987; 24:65-78.

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Ballard, D.J., Strogatz, D.S., Wagner, E.H., Siscovick, D.S., James, S.A., Kleinbaum, D.G., Williams, C.A., Cutchin, L.M., Ibrahim, M.A. The Edgemcombe County High Blood Pressure Control Program: The Process of Medical Care and Blood Pressure Control. American Journal of Preventive Medicine, 1986; 2:276-284.

#### **Herman A. Tyroler**

Tyroler, H.A., Knowles, M.G., and Logue, E.E.: "Modification of the Healthy Worker Effect by Cardiovascular Risk Factors and Self Appraisal of Health" La Medicina del Lavoro 77(1):97-98, 1986.

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Glueck, C.J., Laskarzewski, P.M., Suchindran, C.M., Chambless, L.E., Barrett-Connor, E., Stewart, P., Heiss, G., and Tyroler, H.A.: "Progensy's lipid and lipoprotein levels by parental mortality. The Lipid Research Clinics Program Prevalence Study," Circulation 73 (suppl I):I 51-61, 1986.

Wilcosky, T.C., Kwiterovich, P.O., Glueck, C.J., Suchindran, C.M., Laskarzewski, P., Christensen, B., and Tyroler, H.A.: "Dyslipoproteinemia in black participants. The Lipid Research Clinics Program Prevalence Study," Circulation 73 (suppl I): I 119-125, 1986.

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Gordon, D.J., Knoke, J., Probstfield, J.L., Superko, R., and Tyroler, H.A.: "High-density lipoprotein cholesterol and coronary heart disease in hypercholesterolemic men: The Lipid Research Clinics Coronary Primary Prevention Trial," Circulation 74(6):1217-1225, 1986.

Strogatz, D.S., Tyroler, H.A., Watkins, L.O., and Hames, C.G.: "Electrocardiographic abnormalities and mortality among middle-aged black men and white men of Evans County, Georgia," Journal of Chronic Diseases 40(2):149-155, 1987.

#### **Timothy C. Wilcosky**

Wilcosky, T.C., Kwiterovich, P.O., Glueck, C.J., et al. Dyslipoproteinemia in black participants. The LRC Prevalence Study. Circulation 1986; 73 (suppl 1): 119-25.

Barrett-Connor, E., Wilcosky, T., Wallace, R.B., Heiss, G. Resting and exercise ECG abnormalities associated with sex hormone use in women: The LRC Program Am J Epidemiol 1986; 123:81-8.

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Wilcosky, T.C., Harris, R.B., Weissfeld, L. The prevalence and correlates of Rose questionnaire angina among women and men in the LRC Prevalence Study Population. Am J Epidemiol 1987 125:400-9.

Wilcosky, T., Wing, S. The healthy worker effect: Selection of workers and workforces. Scand J Work Environ Health 1987; 13:70-2.

Wilcosky, T., Chambless, L. Estimating epidemiologic parameters by regression (Response to Comment), J Chron Dis 1987 (in press)

Wilcosky, T., Hyde, J., Anderson, J.J.B., et al. Obesity and mortality in the LRC Follow-up Study. Am J Epidemiol 1987 (submitted for publication).

#### **Steven B. Wing**

Logue, E.E. and Wing, S. Life-table methods for detecting age-risk factor interactions in long-term follow-up studies. Journal of Chronic Diseases, 39:709-717, 1986.

Wing, S., Hayes, C., Heiss, G., John, E., Knowles, M., Riggan, W., and Tyroler, H.A. Geographic variation in the onset of decline of ischemic heart disease mortality in the US American Journal of Public Health, 76:1404-1408, 1986.

Wilcosky, T. and Wing S. The healthy worker effect: Selection of workers and work forces. Scandinavian Journal of Work and Environmental Health 13: in press, 1987.



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Tennis, P., Wing, S., and Tyroler, H.A. Geographic Variation Among State Economic Areas in Levels and Declines of Ischemic Heart Disease Mortality in women of the US Southeast, 1968-1978. Proceedings of the Workshop on Coronary Heart Disease in Women in Washington, DC, January 1986, to be published, 1987.

D. Papers presented by faculty.

**Shirley Beresford**

American Public Health Association Annual Meeting: Improving recall of past hormone use in case-control studies. October 1986.

Epidemiology Cancer Seminar: Enhancing cancer prevention and control in Primary Care settings. October 1986.

University of Washington, School of Public Health and Community Medicine: The Prevention of Cancer: From Public Policy to Primary Care Medicine. November 1986

Prevention '87 Acceptability of Patient Self-Help Materials in Dietary Change. April 1987. (Poster presentation)

**Gerardo Heiss**

Presenter, American Heart Association Workshop on Evolution of Human Atherosclerotic Plaque, September 20-24, 1986.

Presenter, North Carolina Cardiac Rehabilitation Association 1987 Symposium, "Update: Current Lipid Studies," Pinehurst, NC, February 13, 1987.

Presenter, 38th Annual Meeting of the North Carolina Affiliate of the American Heart Association, "The Current Status of Coronary Heart Disease in North Carolina," May 15, 1987.

**Barbara S. Hulka**

"Passive Smoking: Who Gets Hurt" at 1987 North Carolina Health Promotion and Wellness Institute, Wake AHEC, Raleigh, NC, 5/15/87.

"Replacement Estrogens and Other sources of Risk" at meeting of American Cancer Society National Conference on Gynecologic Cancer, Atlanta, GA, 9/17/86.

"Passive Smoking as a Model for the Assessment of Exposure to Low Levels of Carcinogens" at 1987 Annual Winter Toxicology Forum, Washington, DC, 2/16-18/87.

"Epidemiology of Estrogen Therapy" at Columbia Hospital for Women Medical Center's Spring Seminar in Obstetrics and Gynecology, Washington, DC, 5/15-16/87.

"Cancer Screening: Degrees of Proof and Practical Application" at the Second National Conference on Cancer Prevention and Detection, American Cancer Society, Seattle, Washington, June, 1987.

**Michel A. Ibrahim**

Ibrahim, M.A.: The Clinical and Public Health Approaches in Prevention: The declining CHD Mortality and Behavioral Change. The Royal Society of Medicine, London, England, December 3, 1986.

**Sherman A. James**

James, S.A.: "Psychosocial Precursors of Hypertension: Epidemiological Evidence." Presented at the American Heart Association Conference on Behavioral Medicine and Cardiovascular Disease, Sea Island, GA, February 3-7, 1985.

James, S.A., Strogatz, D.A., LaCroix, A.Z.: "John Henryism and Blood Pressure Differences Among Black Men: Social Supports and Economic Strain." Presented at the 6th Annual Meeting of the Society of Behavioral Medicine, New Orleans, LA, March 27-30, 1985.

James, S.A.: "The Edgecombe County High Blood Pressure Control Program: A Summary." Presented at the National Conference on High Blood Pressure Control, Chicago, IL, April 28-30, 1985.

James, S.A.: (For Paul A. Obrist and Kathleen C. Light): "Psychosocial Correlates of Reactivity in Black and White Male College Students: Preliminary Findings." Presented at the NHLBI Workshop, Bethesda, MD, May 31, 1985.

**Berton H. Kaplan**

"Religion in the Stress and Adaptation Paradigm," Stanford/MacArthur Symposium on Socio-Physiology, Stanford, CA, 1986.

**David A. Savitz**

Savitz, D.A. Human health effects of extremely low frequency electromagnetic fields: Critical review of clinical and epidemiologic studies. Presented at the IEEE Power Engineering Society Winter Meeting, New York City, 1986.

Savitz, D.A. Studies of occupational health effects from electromagnetic fields. Presented at Duke University Occupational Medicine Seminar series, Durham, NC, 1987.

Savitz, D.A. Review of Occupational Studies. Presented at Workshop on Epidemiologic Studies on Electromagnetic Fields and Cancer in Humans, Denver, CO, 1986.

Savitz, D.A. Wachtel, H., Barnes, F. Results of case-control study of childhood cancer and exposure to electromagnetic fields. Presented at Contractors Review of Biological Effects from Electric and Magnetic Field, Air Ions and Ion Currents associated with High Voltage Transmission Lines, Denver, CO, 1986.

Burchfiel, C.M., Chestnut, L.G., Savitz, D.A. Air pollution and respiratory health: Results from NHanes I and EPA. Presented at the Sixth Annual Epidemiologic Research Exchange, Denver, CO, 1986.

Savitz, D.A. Human studies of human hazards. Presented at the Ninth Symposium on Statistics and the Environment, Washington, DC, 1986.

Savitz, D.A. Review of epidemiologic studies of cancer and exposure to electromagnetic fields. Presentation at the Electric Power Research Institute, Palo Alto, CA, 1986.

Barnes, F.S., Wachtel, H., Savitz, D.A., Fuller, J., Van Feldt, W. Magnetic Fields and wiring configuration. Presented at the Bioelectromagnetics Society Annual Meeting, Madison, WI, 1986.

**Victor J. Schoenbach**

Schoenbach, V.J. Appraising Health Risk Appraisal. Invited discussion paper for "Health Risk Appraisal: Scientific Practical, and Ethical Challenges," Symposium at the Eighth Annual Scientific Sessions of the Society of Behavioral Medicine, Washington, DC, March 21, 1987.

Schoenbach, V.J. "Working Paper on Smoking Cessation Approaches for Black Americans," Presented at the Smoking, Tobacco, and Cancer Program Scientific Forum "Toward the Year 2000: The Role of Smoking Control in Cancer Reduction", NIH National Cancer Institute, Bethesda, MD, April 1987.

**David S. Strogatz**

Ballard, D.J., Strogatz, D.S., Wagner, E.H., et al. The Edgecombe County High Blood Pressure Control Program: The Process of Medical Care and Dropping Out of Care Among Hypertensive Patients. Session on Delivering Preventive Services, PREVENTION 87 Conference, Atlanta, GA, 1987.

Siscovick, D.S., Strogatz, D.S., Fletcher, S.W., et al. Hypertension Treatment, Control, and Functional Status. Joint meeting of the American Federation of Clinical Research and the Society for Research and Education in Primary Care Internal Medicine, Washington, DC, 1986

**H.A. Tyroler**

Presenter, US-Federal Republic of Germany Workshop on Cardiovascular Diseases, "Geographic Variation in Levels and Trends of IHD Mortality in US Women, 1968-1983," Stuttgart, Federal Republic of Germany, September 3-5, 1986.

Presenter, World Congress of Cardiology: "Review of Lipid Lowering Clinical Trials in Relation to Observational Epidemiologic Studies," Washington, DC, September 15, 1986.

Presenter, US-USSR Second Lipoprotein Symposium, "Results of the US Follow-Up Study," Bethesda, MD, September 22-23, 1986.

Panel Discussant, US-USSR Second Lipoprotein Symposium, "A Comparison of the Correlates of Lipids and Lipoproteins in Men 20-39 Years in US and USSR Samples," Bethesda, MD, September 22-23, 1986.

Presenter, US-USSR Second Lipoprotein Symposium, "Epilogue," Bethesda, MD, September 22-23, 1986.

Presenter, IX International Symposium on Drugs Affecting Lipid Metabolism, "Role of HDL as a Risk Factor for Coronary Heart Disease," Florence, Italy, October 22-25, 1986.

Presenter, Second International Interdisciplinary Conference on Hypertension in Blacks, "Quality of Life and Electrocardiographic Changes at Twelve Year Follow-Up of Black Hypertensives in the Evans County Hypertension Detection and Follow-up Program (HDFP)," Atlanta, GA, March 5-7, 1987.

Panel Discussant, Conference on Socioeconomic Factors and Health, Stanford, CA, March 25-27, 1987.

Presenter, International Symposium on Lead-Blood Pressure Relationships, "Epidemiology of Hypertension as a Public Health Problem," Chapel Hill, NC, April 27-29, 1987.

Presenter, International Conference on Regional Differences in Cardiovascular and Cancer Mortality and Morbidity, "Regional differences in cardiovascular mortality in the United States," Leuven, Belgium, May 7-8, 1987.

Panel Discussants, NHLBI Antihypertensive Drug Treatment: The Benefits, Costs, and Choices. Bethesda, MA, June 11-12, 1987.

**Timothy C. Wilcosky**

Wilcosky, T., Harris, R., Weissfeld. "The prevalence and correlates of Rose Questionnaire angina in the LRC Prevalence Study Population", Annual Meeting of the Society for Epidemiologic Research, Pittsburgh, PA, June 18-20, 1986. Am J. Epidemiology 1986; 124:521. (abstract)

**Steven B. Wing**

Wing, S., Hayes, C., Heiss, G., John, E., Knowles, M., Riggan, W., and Tyroler, H.A. Geographic variation in the onset of the decline of ischemic heart disease mortality in the US 26th Annual Conference on Cardiovascular Disease Epidemiology of the Council on Epidemiology, American Heart Association, San Francisco, CA, March 1986.

**IV. PUBLIC SERVICE**

**Caroline Becker**

Department Activities:

Equal Employment Opportunity Officer,  
Member, Space Committee,  
Member, Faculty Recruitment Committees  
Editor, The Numerator (EPID's Newsletter)  
Moderator, Annual Infectious Disease Symposium (1987: Daycare  
Issues)

University Activities:

Member AAUP Committee for Women.  
Vice President & President Elect, AAUP-CH, 1986  
Faculty Council, Alternate, 1987

State Activities:

Lecturer in Neurology, Bowman-Gray School of Medicine, Wake  
Forest University  
Judge, Governor's Award for Fitness and Health in Business and  
Industry, 1983-  
Member, Restaurant Rules Revision Committee, 1986-

National Activities:

National Secretary-Treasurer, Delta Omega Society, 1981-.

**Shirley Beresford**

Department Activities:

Member, Graduate Studies Committee  
Chair, Master's Examination Committee  
Liaison faculty, Doctoral Training Program at VA

School Activities:

Member, Search Committee for Chair of Department of Biostatistics  
Member, Steering Committee for health Promotion and Disease  
Prevention  
Member, Search Committee for Program Coordinator for health  
Promotion and Disease Prevention  
Member, Subcommittee on Research Grant Allocation in Health  
Promotion and Disease Prevention

University Activities:

Family Medicine: Faculty advisor for Mid-Career Faculty  
Development Program.

National:

Member Professional Advisory Board, Spina Bifida Association of  
America.  
Member, American Public Health Association  
Member, Society for Epidemiologic Research  
Member, Delta Omega Society, Theta Chapter

International:

Member, International Epidemiological Association  
Member, Society for Social Medicine  
Fellow, Royal Statistical Society

**Harvey Checkoway**

Department Activities:

Member, Admissions Committee.  
Grader, Doctoral Qualifying Examination Committee, Master's Exam  
Committee  
Instructor, EPID 162, EPID 276  
Teaching Participation, EPID 160, EPID 256, EPID 233  
Serve as member of 8-10 doctoral dissertation committees.

National Activities:

Consultant: Research Triangle Institute, Research Triangle Park, NC. Assistance in the preparation of scientific proposals including those for studies of health effects of dioxin and benzene. (1980-present).

**Gerardo Heiss**

Department Activities:

Member, Graduate Studies Committee

School Activities:

SPH Institutional Review Board

National Activities:

National Heart, Lung, and Blood Institute, Member, Clinical Trials Review Committee; Member, Data Review Board, B-Mode Assessment Program  
American Heart Association, Member, Council on Epidemiology.

**Barbara S. Hulka**

University Activities:

Attended Epidemiology Regional Conference, Centers for Disease Control Epidemic Intelligence Service, 3/20/87, UNC-CH.  
Member of the Administrative Board of the School of Nursing  
Member of the Steering Committee of the Bicentennial Case Statement Committee

State Activities

Participated in meeting for establishing State Cancer Registry, Raleigh, 4/16/87.  
Participated in and gave presentation on "Passive Smoking: Who Gets Hurt" at 1987 North Carolina Health Promotion and Wellness Institute, Wake AHEC, Raleigh, NC, 5/15/87.

National Activities

Member, Preventive Medicine Public Health Committee, National Board of Medical Examiners  
Member, American College of Preventive Medicine Board of Regents  
Member, National Academy of Sciences, Committee on Vietnam Veterans  
Participated in and gave talk on "Replacement Estrogens and Other sources of Risk" at meeting of American Cancer Society National Conference on Gynecologic Cancer, Atlanta, GA, 9/17/86.

- Participated in site visit for National Cancer Institute at Fred Hutchinson Cancer Center, Seattle, WA, 11/10-11/86.
- Participated in press conference at release of Passive Smoking Report, National Academy of Sciences, Washington, DC, 11/14/86
- Participated in site visit for the Council on Education for Public Health at University of South Florida, Tampa, FL, 11/17-19/86.
- Participated in and gave presentation on "Passive Smoking as a Model for the Assessment of Exposure to Low Levels of Carcinogens" at 1987 Annual Winter Toxicology Forum, Washington, DC, 2/16-18/87.
- Attended Annual Meeting of American Epidemiological Society, Charleston, SC, 3/17-18/87.
- Participated in Conference on Research Methodology: Strengthening Causal Interpretations of Non-Experimental Data, National Center for Health Services Research and Health Care Technology Assessment, at the University of Arizona, Tucson, AZ, 4/8-10/87.
- Participated in and gave presentation on "Epidemiology of Estrogen Therapy" at Columbia Hospital for Women Medical Center's Spring Seminar in Obstetrics and Gynecology, Washington, DC, 5/15-16/87.

#### International Activities

- Participated in and contributed to report of World Health Organization Symposium on Improving Safety Requirements for Contraceptive Steroids, Geneva, Switzerland, 2/1-4/87.

#### **Michel A. Ibrahim**

#### University Activities:

- Member (1976-), UNC Health Services Research Center Policy Board.  
 Chair (1985-86) UNC Center for Health Promotion and Disease Prevention Policy Board (Member 1987-)  
 Chair, UNC-CH Task Force on AIDS.

#### State Activities:

- Health promotion and disease prevention activities with the North Carolina legislature and local health directors  
 Promotion of public health in the state through activities with the Alliance for the Advancement of Public Health

#### National Activities:

- Consultant, National Cancer Institute; National Institutes on Aging; National Heart, Lung and Blood Institute; National Institute on Alcohol Abuse and Alcoholism.  
 Editorial Consultant: Journal of Chronic Disease, Am. J. of Public Health, Journal of Behavioral Medicine, Journal of Rural Health.



President (1987-88), American College of Epidemiology.  
Faculty (1987) University of Minnesota Summer Program,  
Minneapolis, Minnesota.

**Sherman A. James**

Department Activities:

Chair, Space Committee  
Member, Doctoral Qualifying Exam. Comm.  
Departmental liaison to School of Public Health's Program in  
International Health

School Activities:

Member, Dean's Ad Hoc Committee on Health Promotion and Disease  
Prevention.  
Member, Search Committee for Chair of Health Education.  
Chair, SPH Graduate Programs Committee, 1984-1986

University Activities:

Appointed to the University Bicentennial Steering Committee  
(1986-1992).

National Activities:

Received a 3 year (1987-1990) NIH/NHLBI grant to continue  
epidemiological studies of psychosocial and dietary factors in  
the etiology of hypertension in blacks.  
Consulting Editor, Behavioral Medicine Abstracts, 1983-1986.

International Activities:

Received Pogue Faculty Research Leave Award to develop a  
hypertension research project in Salvador, Brazil (July 1,  
1986-June 30, 1987).  
Visiting Professor of Preventive Medicine, Federal University of  
Bahia, Salvador, Brazil (July 1, 1986-June 30, 1987).

**Berton H. Kaplan**

Department Activities:

Deputy Chair for Academic Affairs, 1985-  
Chair, Graduate Studies Committee, 1984-

School Activities:

Chair, School of Public Health Smoking Policy Committee, 1986-  
Maternal and Child Health Search Committee, 1986-87  
Chair, Greenberg Award Committee, 1986-87  
Member, Committee on Teaching, 1986-87

University Activities:

Chancellor's Committee on Established Lectures, 1983-87.  
Member, UNC Medical School Task Force on Teaching of the  
Humanities and Behavioral Sciences, 1986-87

National Activities:

Grants Advisor to the William T. Grant Foundation.  
Member, Editorial Boards:  
Journal of Human Stress  
Journal of Behavioral Medicine  
Book Review Editor, Journal of Human Stress  
Reviewer, American Journal of Epidemiology  
Social Forces  
Medical Care  
Member of the Psychosocial Advisory Group to the American Cancer  
Society. 1982- Chair, Special  
Task Force on Support  
National Science Foundation Grant Advisor, 1980-  
Member, Institute of Medicine Advisory Committee on Mental Health  
and Behavioral Medicine, 1986-.

**Margaret McCann**

Department Activities:

Organized Alumni Conference Technical Session  
1987 Session on AIDS screening (received considerable media  
attention)

National Activities

Consultant for Family Health International on international  
breast-feeding projects

**David A. Savitz**

Department Activities:

Department Seminar Committee  
Admissions Committee  
Co-taught Epid 201 with R. Fletcher  
Taught Reproductive Epidemiology course

School Activities

Institutional Review Board on Research Involving Human Subjects

University Activities:

Mellon Faculty Fellow, Carolina Population Center  
Member Low Birth Weight Prevention Task Force Center for Health  
Promotion and Disease Prevention

National Activities:

Participant in National Center for Health Statistics workshop on  
industry and occupation coding on death certificates  
Member, Family Health International's Protection of Human  
Subjects Committee

**Victor J. Schoenbach**

Department Activities:

Faculty Coordinator of Departmental Technical Sessions for SPH  
Alumni Conference, December 1983 -  
Computer Committee (COMCOM), 1984 - (Chair)  
Funding Consultant, Fall 1987 -  
Space Committee, 1984-

School Activities:

Computer and Data Processing Advisory Committee CADPAC Committee  
- since August 1983  
SPH HP/DP Committee - Steering Committee member - since August  
1984.  
Chair of SPH Alumni Conference Departmental Technical Sessions  
coordinating committee, Fall 1986 - Spring 1987.

State Activities:

Spoke on "Health Risk Appraisal: Is It effective?" at NCPHA on  
September 17, 1986.

University Activities

Center for HP/DP, Cancer Prevention Task Force - participant  
since July 1984.

National Activities:

Consultant, Cancer Control Consortium Research Planning Unit,  
Meharry Medical College, 1986 -.  
American College of Epidemiology (1983-), Member of Task Force  
for Statistics Questions of Committee on Examination (1984-)  
NIH DRG Site Visit/Special Review Committee at the Illinois  
Cancer Council, Chicago, Illinois, 1987.  
Consultant reviewer to NHLBI CVD Risk Reduction in Children RFA  
Review Group, June 1987.

**Carl M. Shy**

Department Activities:

Chair, Admissions Committee  
Grader, Doctoral Qualifying Examination.  
Instructor, EPID 160, EPID 276

School Activities:

Speaker, Principles of Public Health Practice  
Office of Continuing Education  
UNC School of Public Health

University Activities:

Instructor, Clinical Epidemiology, School of Medicine  
Member, Preventive Medicine Advisory Board, School of Medicine  
Advisor, Fellowship Program, Department of Family Medicine,  
School of Medicine

State Activities:

Chair, Air Toxics Panel of the North Carolina Academy of Sciences

National Activities:

Consultant, Environmental Health & Safety, Harvard University  
asbestos hazard from sprayed-on insulation in Williams-James  
Hall  
Consultant, Maine Medical Center, Portland, Maine, on a lung  
cancer and long-term domestic Radon exposure project.  
Member, National Cancer Institute site visit committee to the  
University of Southern California's Program Project on Cancer  
Epidemiology  
Member, site visit committee to the American Health Foundation  
Member, NIOSH Review Panel of Surveys in Surveillance of  
Occupational Illness and Injury

International Activities

Instructor, course in occupational and environmental  
epidemiology, Summer Institute sponsored by the Institut fur  
Dokumentation und Information uber Sozialmedizin, Germany

**David Strogatz**

Department Activities:

Member, Graduate Studies Committee  
Chair, Doctoral Qualifying Examination Committee

University Activities:

Consultant for grant proposal, Wake AHEC

National Activities:

Reviewer, Journal of Human Stress. Medical Care, American Journal of Public Health

**Herman A. Tyroler**

Department Activities:

Chair, Seminar Committee.

School Activities:

Member, Appointments and Promotions Committee  
Member, Health Promotion/Disease Prevention  
Cardiovascular Task Force

National Activities:

American Heart Association; Member, Council on Epidemiology  
Past Chair, Executive Committee, Council on Epidemiology  
Member, Planning Committee 2nd International Symposium of  
Preventive Cardiology  
National Institutes of Health  
Epidemiology & Disease Control Study Section  
National Heart, Lung, and Blood Institute  
Lipid Research Clinics Program  
Member, Integrated Analysis Executive  
Member, Safety and Data Monitoring Board, Follow-up Study-  
Coronary Primary Prevention Trial  
Systolic Hypertension in the Elderly Program  
Member, Policy and Data Monitoring Board Advisory Board  
Trial of Mild Hypertension Study  
Member, Policy Advisory Board  
Honolulu Heart Study  
Member, Policy Advisory Board  
Bilateral Agreements  
Member, US-USSR Steering Committee: The Pathogenesis of  
Atherosclerosis  
Member, US-Polish Steering Committee for Collaborative Studies in  
CVD  
Member, US-Federal Republic of Germany Steering Committee for  
Collaborative Training  
Member, US-Japan Steering Committee: Cardiovascular Disease  
International Symposium on Lead-Blood Pressure Relationships  
Organizer and Presenter, International Symposium on Lead-Blood  
Pressure Relationships, April 27-29, 1987.

Editorial Boards:

American Journal of Epidemiology  
Journal of Chronic Diseases  
Circulation  
Genetic Epidemiology  
Atherosclerosis  
Arteriosclerosis

**Timothy Wilcosky**

Department Activities:

Member, Admissions Committee

School Activities:

Presented at Bob Sandler - Cancer seminar  
Served as moderator for a contributed papers session at the 1987  
annual meeting of the Society for Epidemiologic Research,  
Amherst, MA, June 17-19, 1987.

University Activities

Served as advisor for the 1986-87 Family Medicine Faculty  
Development Fellowship Program; involved periodic meetings with  
a visiting fellow who learned about research methods at UNC.  
Consulting without pay for a staff Fellow at Duke Family and  
Community Medicine Department on a study of epilepsy and  
Parkinson's disease.

**Steven Wing**

Department Activities:

Member, Master's Examination Committee

School Activities

Member, School of Public Health Task Force on Computers in  
Education

University Activities

AHEC presentation in Fayetteville on Cardiovascular Disease  
Epidemiology, November 1986  
Consultant, Duke Study of UNC Alumni

## V. FACULTY

A. List of Faculty [\* indicates primary of multiple academic appointments]

## 1. Full-Time Faculty

Caroline Becker, Associate Professor  
 Shirley A.A. Beresford, Assistant Professor  
 Harvey Checkoway, Research Associate Professor  
 John T. Fulton, Professor Emeritus  
 Gerardo Heiss, Associate Professor  
 Barbara S. Hulka, \*Professor & Chair, EPID  
     Clinical Assoc. Prof., Family Medicine  
     Adjunct Professor of Community and Family                      Medicine,  
     Duke University Medical Center  
 Michel A. Ibrahim, DEAN, School of Public Health  
     \*Professor, Epid.  
     Professor, Soc. & Admin.Med.  
 Sherman A. James, \*Professor, Epidemiology  
     Clinical Professor, Psychology.  
 Berton H. Kaplan, Professor  
 David G. Kleinbaum, Professor of Biostatistics  
 Suzanne Landis, \*Research Assistant Professor  
     Clinical Assist. Prof., Med.  
 David A. Savitz, Assistant Professor  
 Victor J. Schoenbach, Assistant Professor  
 Cecil G. Sheps (Emeritus), Professor, Epid.  
     \*Professor, Soc. & Admin.Med.  
 Carl M. Shy, \*Professor, Epid.  
     Professor, Envir.Sci.& Engineer.  
     Clinical Professor, Fam.Med.  
 David S. Strogatz, Research Assistant Professor  
 Herman A. Tyroler, Alumni Distinguished Professor  
 David Weber, \*Assistant Professor, Medicine  
     Assistant Professor, Epid.  
 Timothy C. Wilcosky, Research Assistant Professor  
 Steven B. Wing, Research Assistant Professor

## 2. Part-Time Faculty

Gory (Bud) J. Love, Research Associate Professor  
 Margaret F. McCann, Lecturer

## 3. Visiting Faculty

Miguel Porta, Visiting Instructor  
 Patricia Tennis, Visiting Instructor

## 4. Adjunct and Fixed-Term Joint Appointments

Naomar Almeida-Filho, Adjunct Associate Professor  
 Dragana Andjelkovich, Adjunct Associate Professor, Epid.  
 Donna Baird, Adjunct Assistant Professor  
 Dan German Blazer, Adjunct Professor  
 Brian A. Boehlecke, Clinical Associate Professor  
 Gwen Collman, Adjunct Assistant Professor  
 Joan Cornoni-Huntley, Adjunct Professor  
 John R. Crouse, Adjunct Associate Professor  
 Lawrence M. Cutchin, Clinical Professor, Epid.  
     Clin. Prof., Med.& Fam.Med.  
     \*Adjunct Prof., Soc.& Admin.Med.  
 Gordon H. DeFriese, Clinical Professor, Epid.  
     \*Professor, Social & Admin.Med.  
 Bruce Duncan, Adjunct Assistant Professor  
 Robert H. Fletcher, Clinical Professor, Epid.  
     \*Professor, Medicine  
 Suzanne W. Fletcher, Clinical Professor, Epid.  
     \*Professor, Medicine  
 H. Hugh Fudenberg, Adjunct Professor  
 Richard C. Graves, Research Associate Professor  
 Raymond S. Greenberg, Adjunct Assistant Professor  
 Jack Griffith, Adjunct Professor  
 Seymour Grufferman, Adjunct Associate Professor  
 Kathryn Magruder-Habib, Adjunct Assistant Professor  
 Curtis G. Hames, Clinical Professor  
 Carl G. Hayes, Adjunct Professor  
 Donald Hayes, Adjunct Professor  
 Suzanne G. Haynes, Adjunct Associate Professor  
 Siegfried H. Heyden, Adjunct Professor  
 Frank J. Hielema, Adjunct Instructor  
 James E. Higgins, Adjunct Assistant Professor  
 John Higginson, Research Professor, Epid.  
     \*Research Professor, Pathology  
 Michael Hogan, Adjunct Assistant Professor  
 Richard J. Levine, Adjunct Associate Professor  
 Clarence C. Lushbaugh, Adjunct Professor  
 J. Newton MacCormack, Adjunct Associate Professor  
 Eugene S. Mayer, Adjunct Professor, Epid.  
     \*Professor, Fam. Med. & Med.  
     Director, AHEC  
 Melinda S. Meade, Adjunct Associate Professor, Epid.  
     \*Associate Professor, Geography  
 George R. Parkerson, Adjunct Associate Professor  
 Donald L. Patrick, Adjunct Associate Professor  
     \*Associate Professor, Soc. & Admin.Med.  
 Walter J. Rogan, Adjunct Assistant Professor  
 Michael Rosenberg, Adjunct Assistant Professor  
 Desmond K. Runyan, Clinical Assistant Professor  
 Dale Sandler, Adjunct Assistant Professor  
 Robert S. Sandler, Clinical Assistant Professor Epid.  
     \*Assistant Professor, Med.



David S. Siscovick, Clinical Assistant Professor, Epid.  
\*Assistant Professor, Med.  
Allan H. Smith, \*Adjunct Associate Professor  
C. Gregory Smith, Adjunct Assistant Professor  
John Stamm, Adjunct Professor  
Michael R. Swift, Clinical Professor, Epid.  
\*Professor, Med.  
Hugh H. Tilson, Adjunct Professor  
James F. Toole, Adjunct Professor  
Ramon Velez, Adjunct Assistant Professor  
Edward H. Wagner, Clinical Professor  
Allen J. Wilcox, \*Adjunct Associate Professor  
Mark E. Williams, \*Assistant Professor, Med.  
Clinical Assistant Prof., Epid.  
Bonnie C. Yankaskas, Adjunct Assistant Professor, Epid,  
\*Research Assist. Prof., Radiology

B. Changes During the Year.

1. Additions, effective 1986-1987

Naomar Almeida-Filho, Adj. Assoc. Prof.,  
effective 08/01/86.  
Donna D. Baird, Adj. Assist. Prof.,  
effective 07/01/86.  
Dan German Blazer, Adj. Professor,  
effective 08/01/86.  
Gwen Collman, Adj. Assist. Prof.,  
effective 08/01/86.  
Jack Griffith, Adj. Professor,  
effective 01/01/87  
Suzanne Landis, Res. Assistant Prof.,  
effective 10/01/86.  
Mark E. Williams, Clin. Assist. Prof.,  
effective 07/01/86.

2. Promotions, Effective 1986-1987.

Harvey Checkoway, Research Associate  
Professor, effective 02/01/87.  
Joan Cornoni-Huntley, Adjunct Professor,  
effective 07/01/86.  
Carl Hayes, Adjunct Professor, effective  
01/01/87.

3. Changes in Rank:

None

4. Leaves:

Sherman A. James, Pogue Leave, effective  
07/01/86 to 01/01/87.

Sherman A. James, Off-Campus Assignment  
in Brazil, effective 01/01/87 to  
06/01/87.

5. Losses: Retirement, Resignation, Death.

C. Proposed Additions:

1 Position at the rank of Assistant or Associate Professor in  
Pharmacoepidemiology.

D. Special Achievements by Faculty-Honors, Awards, Etc.

**Barbara S. Hulka, MD, MPH, Chair of the Department of Epidemiology,** was appointed to a Kenan Professorship on March 1, 1987. The Kenan Professorship is one of four endowed chairs at the University of North Carolina at Chapel Hill bearing the Kenan name. Created in 1917 through the bequest of Mary Lily Kenan Flagler Bingham, the professorship is a memorial to her father, William Rand Kenan Sr., and two uncles, Thomas S. Kenan and James Graham Kenan.

**Sherman A. James, PhD,** was awarded a Pogue Leave with full pay to do research in Brazil for the Fall semester of 1986.

E. Special Assignments of Faculty.

**Barbara S. Hulka, MD, MPH,** chaired a committee of the National Research Council of the National Academy of Sciences. This committee completed an in-depth study of environmental tobacco smoke. The committee found that environmental tobacco smoke is clearly harmful to children and adults.

VI. SPECIAL PLANS, PROBLEMS, DEPARTMENTAL DISTINCTIONS, DEVELOPING TRENDS, AND OTHER MATTERS OF IMPORTANCE.

Our Department is growing and the numbers of enrolled students are increasing. This has occurred because of the increasing numbers of wonderfully qualified applicants to our Department. When I assumed the chairmanship of the department in 1983, our annual quota for new students was 22. This number has been increased to 35 (more than a 50 percent increment). The increased quota has the full support and endorsement of our Dean, Dr. Michel Ibrahim. These applicants come with diverse backgrounds

and interests. Some are medically trained with interest in preventive medicine, occupational medicine or a desire to conduct scientifically-based clinical research and practice. Others come from nursing, dentistry and, most recently, veterinary medicine (representing the ideal setting for defined populations). Applicants with backgrounds in the social sciences and environmental sciences continue to be well represented as do those with strong computer skills and quantitative competencies. Altogether, our student body is as diverse and intellectually exciting as ever.

The obvious pressure which this increase in student body creates is on our faculty to teach and advise more students with increasingly diverse and sophisticated backgrounds. To meet this need, we are in the process of faculty recruitment. In these recruitment efforts we are trying not just to respond to today's immediate pressure, but to take a future-oriented view on the directions of epidemiology.

One might think of epidemiologic research within a three dimensional matrix. The first level can be dichotomized into etiologic and intervention research. The former represents our traditional emphasis on identifying etiologic factors in disease causation; the latter is more in line with disease prevention and control efforts. Given that etiologic factors are known, the research concerns how we intervene and evaluate the effectiveness of our interventions in reducing disease outcomes or improving health.

It is our traditional emphasis on disease specific epidemiology, for example in cardiovascular disease, cancer or reproductive outcomes, that forms the second dimension which overlaps and crosses over the primary simplified dichotomy of etiology and intervention.

It is in the third dimension of our matrix where I believe the future lies in epidemiologic research. It represents the ultimate rationale for epidemiologists in multidisciplinary research, whether we are the principle investigators or the collaborators with others. This has to do with the level of organization of our thinking about epidemiologic research. It straddles the range of levels from ecology to molecular biology. It encompasses both our notion of exposure and disease and has the potential to change both. It is the reason why collaboration will become essential in epidemiologic research. We as epidemiologists must take advantage of the advances occurring in other scientific disciplines and by doing so will enhance and strengthen our own field. The obvious example of this thrust is the emergence of Molecular or Biochemical epidemiology. Although the label is not totally satisfying, the implication is clear. We have the opportunity to improve the sensitivity and specificity of our exposure variables, characterize earlier stages of disease outcomes and enhance our capability to understand the mechanisms of disease causation and occurrence. Although the example is obvious within a biological model of health and disease, the principles apply equally to a social science framework for understanding disease causation and prevention.

The notion then of our third dimension having to do with the hierarchy of levels of organization from the ecologic to the molecular leads back to the issue of who will be the faculty members of the future in departments of epidemiology. To my mind, they will be individuals who are soundly trained in epidemiologic methods, the great epidemiologic advance of the past 15 years. But additional background, either through formal education, training or experience, will be necessary. This background may be in medicine, genetics, psychology or other disciplines. Our Department will be searching for faculty with interests in any one of several fields, including infectious diseases, pharmacoepidemiology, genetic epidemiology and the epidemiology of aging. Although these labels may sound traditional, the depth and breadth of research potential is very new and exciting.

B. Teaching Load of Faculty

Fall Semester 1986

<u>Instructor</u>	<u>Course Number</u>	<u>Course Title</u>	<u>Total Enrolled</u>	<u>PHO</u>	<u>HU</u>	<u>EC</u>	<u>AS</u>	<u>GRO</u>	<u>MED</u>	<u>OTHER</u>	<u>Course Hours</u>
Becker, C.	EPID 160	Principles of Epidemiology (Off-campus)	13	13							3.0
	EPID 211	Determinants of Communicable Dis.	5	5							3.0
Beresford, S.	EPID 360	Research in Epidemiology	1	1							Var
Checkoway, H.	EPID 360	Research in Epidemiology	3	3							Var
Davis, C.	EPID 256	Cardiovascular Dis. Epid. (with others)	16	15				1			3.0
Fletcher, R.	EPID 140	Problems in Epidemiology	9	7		2					Var
	EPID 360	Research in Epidemiology	1	1							Var
Heiss, G.	EPID 256	Cardiovascular Dis. Epid. (with others)	16	15				1			3.0
	EPID 360	Research in Epidemiology	3	3							Var
	EPID 392	Master's Paper	2	2							Var
	EPID 394	Doctoral Dissertation	3	3							Var
Hulka, B.	EPID 140	Problems in Epidemiology	4	4							Var
	EPID 168	Fundamentals of Epidemiology (with others)	34	29		4		1			4.0
	EPID 257	Teaching Internship	5	5							4.0
	EPID 360	Research in Epidemiology	2	2							Var
	EPID 394	Doctoral Dissertation	2	2							Var
Kaplan, B.	EPID 160	Principles of Epidemiology (with others)	150	140	2	1	2	5			3.0
	EPID 360	Research in Epidemiology	2	2							Var
	EPID 392	Master's Paper	1	1							Var
	EPID 394	Doctoral Dissertation	1	1							Var
Kleinbaum, D.	EPID 268	Advanced Methods in Epid.	44	43		1					4.0
	EPID 360	Research in Epidemiology	1	1							Var
	EPID 394	Doctoral Dissertation	1	1							Var
McCann, M.	EPID 160	Principles of Epidemiology (with others)	150	140	2	1	2	5			3.0
	EPID 360	Research in Epidemiology	1	1							Var



B. Teaching Load of Faculty

Fall Semester 1986

<u>Instructor</u>	<u>Course Number</u>	<u>Course Title</u>	<u>Total Enrolled</u>	<u>PHO</u>	<u>HU</u>	<u>EC</u>	<u>AS</u>	<u>GRO</u>	<u>MED</u>	<u>OTHER</u>	<u>Course Hours</u>
Runyan, D.	EPID 140	Problems in Epidemiology	7	7							Var
Sandler, R.	EPID 360	Research in Epidemiology	1	1							Var
Savitz, D.	EPID 140	Problems in Epidemiology	14	13		1					Var
	EPID 394	Doctoral Dissertation	3	3							Var
Schoenbach, V.	EPID 168	Fundamentals of Epidemiology	34	29		4		1			4.0
	EPID 360	Research in Epidemiology	1	1							Var
	EPID 394	Doctoral Dissertation	1	1							Var
Shy, C.	EPID 160	Principles of Epidemiology (with others)	150	140	2	1	2	5			3.0
	EPID 360	Research in Epidemiology	3	3							Var
	EPID 394	Doctoral Dissertation	7	7							Var
Strogatz, D.	EPID 270	Psychosocial Epidemiology	7	7							3.0
Tyroler, H.	EPID 256	Cardiovascular Dis. Epid. (with others)	16	15				1			3.0
	EPID 394	Doctoral Dissertation	3	3							Var
Weber, D.	EPID 218	Infectious Disease Epidemiology	13	13							3.0
Wilcosky, T.	EPID 168	Fundamentals of Epidemiology (with others)	34	29		4		1			4.0
Wilcox, A.	EPID 140	Problems in Epidemiology	2	2							Var
Yankaskas, B.	EPID 394	Doctoral Dissertation	1	1							Var





B. Teaching Load of Faculty

Spring Semester 1987

<u>Instructor</u>	<u>Course Number</u>	<u>Course Title</u>	<u>Total Enrolled</u>	<u>PHO</u>	<u>HU</u>	<u>EC</u>	<u>AS</u>	<u>GRO</u>	<u>MED</u>	<u>OTHER</u>	<u>Course Hours</u>
Becker, C.	EPID 160	Principles of Epidemiology (Off-campus) (Sec. 003)	38	38							3.0
	EPID 361	Research in Epidemiology	2	2							Var
Beresford, S.	EPID 163	Epidemiology in Public Health	57	1	52	1	3				3.0
	EPID 361	Research in Epidemiology	1	1							Var
	EPID 394	Doctoral Dissertation	1	1							Var
Checkoway, H.	EPID 162	Epid. of Envir. & Occup. Health	54	42	2	4		5		1	3.0
	EPID 276	Advanced Envir. & Occup. Epid. (with others)	9	7		1		1			3.0
	EPID 361	Research in Epidemiology	2	2							Var
	EPID 392	Master's Paper	1	1							Var
Crouse, J.	EPID 361	Research in Epidemiology	1	1							Var
Davis, C.	EPID 266	Epidemiologic Investigation (with others)	2	2							3.0
Fletcher, R.	EPID 201	Epidemiologic Research Methods (with others)	37	36				1			3.0
	EPID 361	Research in Epidemiology	4	4							Var
	EPID 392	Master's Paper	3	3							Var
Fletcher, S.	EPID 361	Research in Epidemiology	1	1							Var
Heiss, G.	EPID 266	Epidemiologic Investigation (with others)	2	2							3.0
	EPID 361	Research in Epidemiology	1	1							Var
	EPID 394	Doctoral Dissertation	2	2							Var
Hulka, B.	EPID 141	Problems in Epidemiology	5	5							Var
	EPID 233	Cancer Epid & Pathogenesis	13	13							3.0
	EPID 257	Teaching Internship	6	6							4.0
	EPID 361	Research in Epidemiology	1	1							Var
	EPID 392	Master's Paper	2	2							Var
	EPID 394	Doctoral Dissertation	1	1							Var
Ibrahim, M.	EPID 368	Epidemiology & Health Policy	24	23				1			2.0



B. Teaching Load of Faculty

Spring Semester 1987

<u>Instructor</u>	<u>Course Number</u>	<u>Course Title</u>	<u>Total Enrolled</u>	<u>PHO</u>	<u>HU</u>	<u>EC</u>	<u>AS</u>	<u>GRO</u>	<u>MED</u>	<u>OTHER</u>	<u>Course Hours</u>
Kaplan, B.	EPID 220	Hlth Promotion/Disease Prevention (with others)	19	18						1	3.0
	EPID 361	Research in Epidemiology	1	1							Var
	EPID 392	Master's Paper	1	1							Var
	EPID 394	Doctoral Dissertation	2	2							Var
Kleinbaum, D.	EPID 269	Special Topics in Epid. Methods	24	22		1		1			3.0
Landis, S.	EPID 141	Problems in Epidemiology (with others)	11	10		1					Var
	EPID 361	Research in Epidemiology	1	1							Var
McCann, M.	EPID 361	Research in Epidemiology	2	2							Var
	EPID 392	Master's Paper	1	1							Var
Patrick, D.	EPID 221	Assmnt of Hlth & Quality of Life	5	5							3.0
Savitz, D.	EPID 141	Problems in Epidemiology (with others)	3	3							Var
	EPID 201	Epidemiologic Research Methods (with others)	37	36				1			3.0
	EPID 361	Research in Epidemiology	1	1							Var
	EPID 394	Doctoral Dissertation	4	4							Var
Schoenbach, V.	EPID 220	Hlth Promotion/Disease Prevention (with others)	19	18						1	3.0
	EPID 394	Doctoral Dissertation	1	1							Var
Shy, C.	EPID 276	Advanced Envir. & Occup. Epid. (with others)	9	7		1		1			3.0
	EPID 394	Doctoral Dissertation	8	8							Var
Strogatz, D.	EPID 361	Research in Epidemiology	1	1							Var
Tyroler, H.	EPID 266	Epidemiologic Investigation (with others)	2	2							3.0
	EPID 361	Research in Epidemiology	1	1							Var
	EPID 394	Doctoral Dissertation	3	3							Var



B. Teaching Load of Faculty

Spring Semester 1987

<u>Instructor</u>	<u>Course Number</u>	<u>Course Title</u>	<u>Total Enrolled</u>	<u>PHD</u>	<u>HU</u>	<u>EC</u>	<u>AS</u>	<u>GRO</u>	<u>MED</u>	<u>OTHER</u>	<u>Course Hours</u>
Weber, D.	EPID 141	Problems in Epidemiology (with others)	11	10		1					Var
	EPID 361	Research in Epidemiology	2	2							Var
Wilcosky, T.	EPID 361	Research in Epidemiology	1	1							Var
	EPID 394	Doctoral Dissertation	1	1							Var
Wilcox, A.	EPID 141	Problems in Epidemiology (with others)	3	3							Var
	EPID 392	Master's Paper	1	1							Var
Wing, S.	EPID 392	Master's Paper	2	2							Var
Yankaskas, B.	EPID 394	Doctoral Dissertation	1	1							Var

