

## DEPARTMENT OF EPIDEMIOLOGY

## ANNUAL REPORT

1983-1984

## I. DEPARTMENT ORGANIZATION AND ADMINISTRATION.

The Department of Epidemiology is comprised of a multidisciplinary faculty offering professional training in six primary program areas: Cardiovascular Disease Epidemiology, Cancer Epidemiology, Environmental/Occupational Epidemiology, Health Services Research, Population Epidemiology and Psychosocial Epidemiology. 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 Chairperson, assisted 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 Chairperson, 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 our program, and a

recommendation regarding the student's potential and suitability for doctoral work. The Promotions Committee formally votes on the recommended action, and submits that decision to the Department Chairperson 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. The Chairmen of the committees rotate on an annual basis and 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. The meetings are generally open to students.

The Seminar Committee is chaired by a faculty member on an annual rotation basis. The Committee Chairman 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 administrative support staff was reorganized in November of 1983 to better serve the Chairperson's administrative style. The appointment of an Administrative Officer was made to assume overall responsibility for the management of the department. In addition, effective July 1, 1984, the position of Director of the Epidemiology Data Processing Unit is dissolved due to discontinuation of funding. The Department Chairperson convenes a monthly Management Meeting to review support services and staffing for the department, and to discuss future needs and plans. The meeting is attended by the department's administrative staff, and representatives from the research and secretarial staffs.

Support Staff

(as of July 1, 1984)

Administrative Staff

Carol Parrow	Administrative Officer
Joyce Allen	Registrar
Jinny Reid	Secretary to the Chairperson
Violet Krall	Accounting Office Manager
Elizabeth Watts	Accounting Technician

Secretarial Staff

Phyllis Johnson	Admin. Secretary IV
Lesa McPherson	Secretary IV
Betsy Seagroves	Secretary IV
Noreen Qualls	Secretary IV
Patricia Taylor	Secretary IV
Madeline Walker	Secretary IV
Sally Zimney	Secretary IV

Research Staff

Jo Heiss	Research Associate
Marilyn Knowles	Social Research Assistant
Diane Ramsey	Social Research Assistant
Edward Siff	Social Research Assistant
Joanna Smith	Research Assistant
Susanne Wolf	Research Associate

Data Processing Staff

Edward Bachmann	Computer Systems Analyst
Terry Hudgins	Computer Programmer III
Marti McLanahan	Data Processing Assistant
Veda Manley	Data Processing Coordinator
Vic Rhodes	Computer Programmer II

Employee Terminations

Sandra Graves	Secretary
Sue Hartnett	Social Research Assistant
Joan Healy	Social Research Assistant
Sally Muller	Computer Programmer II
Beth Ragan	Social Research Assistant
Debbi Windham	Accounting Technician

## II. INSTRUCTIONAL PROGRAMS

## A. Courses and Curricula

## 1. Major Changes During the Year:

During 1983-84 the Department of Epidemiology began a major examination of the curriculum. The examination focused primarily on the major elements in the training of an epidemiologist and attempted to identify gaps in training opportunities available. Long-term goals are to assess courses and areas to which students are exposed and to plan for increased coherence of the curriculum.

## 2. New Programs being Planned or Deletions made, including Reasons for Adding or Dropping Program.

During 1983-84 academic year, in association with the Cancer Education Program and the Department of Pathology, a comprehensive multidisciplinary course on fundamentals of oncology was planned, to be initiated during 1984-85. This will provide students involved in cancer research with needed biomedical background.

A seminar in teaching effectiveness, organized by Dr. Berton Kaplan was added to the teaching internship required of all doctoral students in the program.

In response to student requests, a course was initiated to focus on conceptual problems involved in epidemiologic research given during the spring semester by Dr. Robert Fletcher.

## 3. Participation in Interdepartmental or Inter-institutional Programs.

Within the School of Public Health, the Department of Epidemiology is involved extensively with the Occupational Health Studies Group, the Lipid Research Clinics Program, and the Carolina Population Center. Many of our research programs require the participation of a multidisciplinary faculty, some of whom are drawn from within the School. In addition, our faculty are called upon to lecture in courses offered through

other School of Public Health Departments, including an Off-Campus Masters program for which we offer an introductory epidemiology course.

The School of Medicine has been a natural associate on a number of research and teaching efforts. Of particular note are our involvement in the Robert Wood Johnson Clinical Scholars Program (Dr. Hulka, and others), the Joint MD/MPH Program, and the Family Medicine Postgraduate Fellowship Program, and the Regional Medical Program for which we offer an introductory Epidemiology course. We have participated in teaching programs of the Schools of Arts and Sciences and Nursing.

Centers within the Division of Health Affairs, such as the Health Services Research Center, and the Cancer Research Center, draw upon our faculty to provide epidemiologic expertise required in the conduct of their research. Dr. Barbara Hulka chairs the Epidemiologic Section of the Cancer Research Center.

Our faculty have continued to be involved in programs sponsored by other institutions through their participation in short courses, Summer Institutes, and seminar programs. Consultation activities on research programs of other institutions are common. We have increased our association with the Veterans Administration by collaborating on pilot research projects and developing training programs for physicians and health services researchers. We continue to have faculty membership on the Advisory Committee on the Health Services Research Program between the School of Public Health and the Veteran's Administration Health Services Research Program in Durham.

The Department participates in the two off-campus Master's programs offered through the Department of Health Policy and Administration. During the past year, Dr. Carolyn Williams taught the introductory epidemiology courses in these programs.

## B. Enrollment.

## 1. Number of Graduate Students by:

a. <u>Degree</u>	<u>Fall 1983</u>	<u>Spring 1984</u>
Ph.D.	24	22
M.P.H.	20	17
M.S.P.H.	12	12
b. <u>Race-Minority Status</u>		
Black Male	4	4
Black Female	4	4
White Male	21	21
White Female	20	20
Foreign Male	3	2
Foreign Female	3	1
Asian male	1	0
American Indian Female	1	1
c. <u>In-State Residency</u>	26	24
d. <u>Out-of-State Residency</u>	25	24
e. <u>Foreign Students</u>	5	3

## 2. Number of Degrees Awarded:

	<u>Ph.D.</u>	<u>M.P.H.</u>	<u>M.S.P.H.</u>
August 1983	6	0	3
December 1983	6	0	2
May 1984	2	2	0

## 3. Comment on the Quality of Students.

The quality of students in the department continues to be excellent. A number of our students are accomplished professionals whose considerable publishing and presentation activities continue along with their studies in Epidemiology. All students have demonstrated their academic and research ability before coming to the Department. GRE quantitative scores are consistently above the 70th percentile.

4. Apparent Trends in Job Placement of Graduates.

Graduates in Epidemiology find varied career opportunities and are in great demand. The areas of Occupational, Cardiovascular Disease, and Cancer Epidemiology appear to be expanding and demand trained epidemiologists specialized in these areas. Generally our graduates have found positions in government, industry and academics, although they are frequently affected by the periodic freezes in federal positions.

5. Minority Student Enrollment Efforts.

During the pre-application stage inquiries or incomplete applications from qualified minority applicants have been vigorously pursued by letter or by telephone in an effort to complete the application. Individuals approved for admission have been referred to various faculty members and students for personal contact, and the Admissions Committee actively solicited travel funds to support visits by these applicants. In addition, if an applicant was better suited for another department within the School, we brought that individual to the attention of the other department

6. Significant Achievements of Majors.

Honors:

During the year, one of the PhD graduates was nominated for the Bernard G. Greenberg Award for Excellence in Doctoral Research.

Dissertations Completed:

Naima AbdEhghany: "An Epidemiologic Study of Cancer Mortality Among Workers Exposed to Occupational Low Levels of Ionizing Radiation" (Carl Shy, Advisor) December 1983.

Donna Cragle: "The Effects of Genetic and Environmental Interaction in An Epidemiologic Investigation of Colon Cancer and Water Quality" (Carl Shy, Advisor) May 1983

David S. Freedman: "Homocyst[e]line and Coronary Artery Disease" (H.A. Tyroler, Advisor, August 1983)

David Goldsmith: "Respiratory Disease in the North Carolina Furniture Industry: A Pilot Study" (Carl M. Shy, Advisor) December 1983.

Raymond S. Greenberg: "The Population Distribution and Possible Determinants of Neuroblastoma in Children" (Carl M. Shy, Advisor) August 1983.

William C. Jenkins: "The Acceptance of Organized Family Planning Programs by Women in Need in the United States" (A.Omran, Advisor) August 1983.

Tamar Lasky: "The Effect of Preterm Breast Milk on the Growth and Infectious Morbidity of Preterm Infants" (G. Heiss, Advisor) May 1984

Stephen E. Marcus: "The Effects of Program Structure on Access to Primary Health Care" (E. Wagner, Advisor) August, 1983.

Audrey S. Rogers: "Hydralazine: Cancer Risk in a Hypertensive Population" (E. Wagner, Advisor) August 1983.

Maria Schmidt: "Chronotherapeutic Insulin Trial: A Clinical Trial in Type I Diabetes" (G. Heiss, Advisor) December 1983.

David Strogatz: "High Blood Pressure in Edgecombe County, North Carolina: The Contribution of Economic and Social Resources" (S.A. James, Advisor) December 1983.



Andreas Wielgosz: "Self-Labeling as a Determinant of Outcome in Symptomatic Patients with Minimal or No Coronary Artery Disease" (R. Fletcher, Advisor) December 1983.

Jerome Wilson: "An Epidemiologic Investigation of Non-Malignant Respiratory Disease Among Workers in A Uranium Mill" (Carl Shy, Advisor) August 1983.

Steven Wing: "Black/White Mortality and the Effect of Participation in a Community-Based Cohort" (H.A. Tyroler, Advisor) December, 1983.

Grants Awarded For Student Projects:

Job Characteristics, Perceived Control and CHD; 12/31/83 (LaCroix).

Respiratory Disease in the Furniture Industry. Institute of Occupational Safety and Health; 12/31/83 (Shy, Goldsmith)\*.

Symptom Reports and Mortality in Paper Workers; 06/30/84 (Logue).

Publications or Presentations by Students:

Broadhead WE, Kaplan BH, James SA, Wagner EH, et al. The epidemiologic evidence for relationship between social support and health. Am J of Epid 117(5):521-537, 1983.

Broadhead E, Kaplan BH, James SA, Wagner EH, Schoenbach VJ, Grimson R, Heyden S, Tibblin G, Gehlbach S: The Epidemiologic Evidence for a Relationship Between Social Support and Health. American Journal of Epidemiology 1983; 117(4):521-537.

Fredman L and Haynes SG: Chapter 2 - Epidemiology of Aging. In H Phillips and S Gaylord (eds) Aging: A Public Health Perspective. Springer Publishing Co. 1983, in press.

Schoenbach VS, Garrison C, Kaplan BH: A Review of the Epidemiology of Adolescent Depression. Accepted for publication in Public Health Reviews, 1984.

Garrison C, Kaplan BH, Schoenbach VS, et al: The Epidemiology of Family Dynamics and Depression in a High School Population." Accepted as a chapter in a forth- coming book, 1984.

Smith AH, Checkoway H, Goldsmith DF et al.: The use of industry-based case-control studies. British Journal of Industrial Medicine 1984, (in press).

Heiss G., Schonfeld G., Johnson J.L., Heyden S., Hames C.G., and Tyroler H.A. "Black-White Differences in Plasma Levels of Apolipoproteins: The Evans County Heart Study" American Heart Journal 108, 1984.

LaCroix, AZ, Marshall, EG, Hulka, BS: Are OCs Dangerous for Women With Benign Breast Disease or a Family History of Breast Cancer? Your Patient and Cancer 4(5):27-32, 1984.

Williams CA, Beresford SAA, James SA, LaCroix AZ, Strogatz DS, Wagner EH, Kleinbaum DG, Cutchin LM and Ibrahim MA: Social Support, Social Stressors and Treatment Droupout: The Edgecombe County High Blood Pressure Control Program. (submitted for publication).

James SA, LaCroix AZ, Kleinbaum DG, Strogatz DS: John Henryism and Blood Pressure Differences Among Black Men: II. The Role of Occupational Stressors. Journal of Behavioral Medicine 6:257-273, 1984.

Margolis L, McLeroy K, Runyon C, and Kaplan BH: Type A Behavior: An Ecological Approach. Journal of Behavioral Medicine Vol.6: 245-258, 1983.

Goor R., Hosking JR, Dennis BH, Waldman GT, Haynes SG: Nutrient intakes among selected North American Populations in the Lipid Research Clinics Prevalence Study. I. Composition of Fat Intake. Am.J.Clin.Nutr. 1984 (in press).

Checkoway H, Wilcosky T, Wolf P, Tyroler H: An evaluation of the associations of leukemia and rubber industry solvent exposures. Amer. J. of Industrial Medicine, 5: 239-249, 1984.

Wing S, Aubert RE, Hansen JP, Hames CG, Slome C and Tyroler HA: Isolated systolic hypertension in Evans County--I. Prevalence and screening considerations. J Chron Dis, 35:735-742, 1982.

Tyroler H.A., Knowles M.G., Wing S.B., Logue E.E., Davis C.E., Heiss G., Heyden S., and Hames C.G. "Ischemic Heart Disease Risk Factors and Twenty-year Mortality in Middle-Age Evans County Black Males" American Heart Journal 108, 1984.

Wing S., Manton K.G., Stallard E., Hames C.G. and Tyroler H.A. "The Black/White Mortality Crossover: Investigation in A Community-Based Study" American Journal of Gerontology (in press).

C. Teaching Load of Faculty

Fall Semester 1983

Instructor	Course Number	Course Title	Total Enrolled	PHO	HU	EC	AS	GRO	MED	Other	Course Hours
Becker	EPID 140	Probs in Epidemiology	1	1							4
	EPID 211	Determin. of Commun. Dis.	8	8							2
Checkoway	EPID 360	Research in Epidemiology	1	1							6
Fletcher, R.	EPID 140	Problems in Epidemiology	5	5							VAR
	EPID 360	Research in Epidemiology	1	1							3
	EPID 392	Master's Paper	1	1							3
Fletcher, S.	EPID 140	Problems in Epidemiology	2	2							VAR
Haynes	EPID 140	Problems in Epidemiology	1	1							3
	EPID 392	Master's Paper	1	1							3
	EPID 394	Doctoral Dissertation	1	1							9
Heiss	EPID 256	Cardiovascular Dis. Epid. (with others)	12	11			1				3
	EPID 315	Field Training in Epidemiology	1	1							3
Hulka	EPID 394	Doctoral Dissertation	3	3							VAR
	EPID 168	Fundamentals of Epid. (With others)	39	33	5		1				3
	EPID 392	Masters Paper	1	1							3
James	EPID 394	Doctoral Dissertation	2	2							VAR
	EPID 360	Research in Epidemiology	1	1							3
Kaplan	EPID 360	Research in Epidemiology	6	6							3
	EPID 394	Doctoral Dissertation	2	2							VAR
	EPID 257	Teaching Internship (with others)	4	4							4
Kleinbaum	EPID 268	Advanced Methods in Epid	32	30	2						4
	EPID 360	Research in Epidemiology	1	1							2
Oman	EPID 160	Principals of Epidemiology	149	132	6	6	6	1			3
	EPID 161	Epid Population/Dynamics of Family Planning	11	11							2
	EPID 234	Research Design in Epid	15	15							2
Oman	EPID 251	Epid. Meth. in Pop. Research	1	1							3
	EPID 394	Doctoral Dissertation	1	1							0

A. Resesearch Programs in Operation during the Year.

CANCER EPIDEMIOLOGY

Breast Cancer and Estrogen Replacement Therapy.

Concern over the possible effect of estrogen replacement therapy on the subsequent development of breast cancer prompted us to compare 199 post-menopausal breast cancer patients with 451 hospital controls and 852 community controls on their prior use of risk for women with a surgical menopause. Among women with a natural menopause, estrogens administered by all routes were associated with breast cancer risks of 1.7 or 1.8. There was no coherent pattern of changing risks with varying durations of use, different daily dosages, years since first use of estrogen or years since most recent use. Excluding women whose usual estrogen was by injection, the risk estimates of oral estrogens were 1.3 (cases compared to community controls) and 1.2 (cases compared to hospital controls). These increases were not statistically significant. Use of injectable estrogens produced a four-fold increase in breast cancer risk among naturally postmenopausal women. (Hulka)

Hormonal and Personal Effects on Estrogen Receptors in Breast Cancer. Since high estrogen receptor protein (ERP) in breast cancer tissue has a favorable effect on patient prognosis, factors influencing ERP levels are the focus of this research. Two hundred forty-six histologically confirmed primary breast cancer patients from three North Carolina hospitals were interviewed and provided with photographic displays of hormonal products. Their tumor tissue was analyzed for ERP by the sucrose density gradient (SDG) assay. Data were analyzed by multiple regression and logistic regression techniques. An association appeared between use of progestinpredominant and intermediate types of oral contraceptives (OCs) and low ERP. Replacement estrogens were unrelated to ERP levels. An effect of menopausal status, independent of age, was not evident, but the number of patients in the relevant age bracket was small. Statistically significant associations involved age and race among postmenopausal patients. With black breast

cancer patients less than age 70 years as the reference group, the relative odds of having high ERP (greater than 10 fm/mg cytosol protein) was 2.4 times greater among whites less than age 70, 1.6 times greater in blacks aged greater or equal to 70, and 12.8 times higher in whites greater than or equal to 70 years. These differences in ERP may contribute to the black/white differential in breast cancer survival. (Hulka)

Protection Against Endometrial Carcinoma by Combination Product Oral Contraceptives.

Seventy-nine patients with endometrial carcinoma were compared with 203 control subjects regarding their use of combination-product oral contraceptives (OCs). Overall, 6.3% of patients and 15.3% of control subjects had used these products. The risk of endometrial cancer for users of OCs was less than half the risk for nonusers. Five years or more of use reduced the risk to a third. Recent users were strongly protected, whereas discontinuation resulted in risks returning to those of nonusers. Furthermore, OCs with predominantly progestational effects or intermediate formulations produced greater protection than those with predominantly estrogens. This pattern of results is biologically consistent with a protective effect of combination-product OCs against endometrial carcinoma. (Hulka)

Risk Factors for Cervical Cancer. Despite a long history of research into the epidemiology and biology of cervical carcinoma, a definitive statement about its probable causes still remains elusive. This review recognizes the population based data on high and low risk groups and summarizes the findings from numerous case-control studies which have explored the marital, sexual, and reproductive factors associated with cervical cancer. Although vigorously pursued, an increased risk from oral contraceptives has not been convincingly demonstrated. A variety of venerally transmitted organisms appear to be frequent cohabitants with cervical neoplastic cells. Herpes virus type 2 still remains the prime suspect in the complex pathogenesis of cervical neoplasia. Clinical findings, biological characteristics of the virus, serological studies and interactions of host cells and viral products particles continue to stimulate the most intensive investigative efforts. (Hulka)

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 U.S. males. No clear patterns of causality have emerged from epidemiologic investigations of the conventional environmental factors, smoking, diet, viruses and occupation. 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. One reason is that most previous research has relied on measurements of serum hormone levels, without consideration of prostate tissue hormone receptor activity.

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 and human tissue. The relative utilities of the autoradiographic and biochemical hormone receptor assays for epidemiologic research will be evaluated in a comparative pilot study on 20 patients with newly diagnosed prostatic adenocarcinoma and 20 patients with newly diagnosed benign prostatic hyperplasia. The two techniques will be compared with respect to reproducibility of results, ease of laboratory analysis, tissue requirements and cost.

This pilot study will provide descriptive data on hormone receptor distributions, by age and race, among prostate cancer and benign prostatic hyperplasia patients. Additionally, serum levels of testosterone, progestagen and 17-beta-estradiol will be measured and correlated with autoradiographically and biochemically 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. Ultimately, study of receptor markers should enhance understanding of the etiology and pathogenesis of clinically

apparent neoplastic disease arising from latent cancer, and provide a guide for therapy and prognosis. (Hulka, Checkoway).

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 knowledge, consultative support to multidisciplinary cancer research with a primary focus in areas other than epidemiology. (Hulka, Ibrahim, Shy, Tyroler)

#### CARDIOVASCULAR DISEASE EPIDEMIOLOGY

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 are being conducted including studies of the 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% 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 (publications in press). Examination of additional determinants of lipid and lipoprotein levels is currently underway (analysis stage). (Tyroler, Haynes, Heiss)

Geographic and Temporal Variation in Mortality, and Development of Health Indices, in Relation to Environmental Quality. This a Cooperative Agreement between the University of North Carolina Department of Epidemiology and the U.S. 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 development of new indices of health effects. The Cooperative Agreement provides students in the Department of Epidemiology the opportunity to participate as Graduate Research Assistants.

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.

Pilot Evaluation Studies of High Blood Pressure Control. Household surveys combined with intervention trials are the basis for a study of hypertension and its treatment in a rural community. The household survey, completed in 1980, was designed to determine the prevalence of hypertension in the community, current knowledge, attitudes and beliefs about hypertension, and the hypertension medication practices of the population. Randomized intervention trials of moderate and severe hypertensives will be designed to measure efficacy of a variety of modalities which promote adherence to therapeutic regimens. Hypertension control programs in select churches and in low industrial subpopulations have been implemented to test the effectiveness of selected methods of hypertension control in these settings. A second household survey will be conducted in 1983 to assess the impact for the various efforts of hypertension control in the community. (Ibrahim, James, Becker, Tyroler, Wagner, Williams)

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 NHBLI 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).

Community Surveillance in the Southeastern United States. The purposes of this project are to monitor trends of incidence of fatal and non-fatal CHD and its relation to changing risk factors, through a system of prospective community surveillance. Such a system will take into account: current levels of cardiovascular disease and coronary heart disease mortality and declines in mortality since 1968; racial, ethnic, and socioeconomic variables; environmental exposures; adequacy of sample sizes for resolving critical questions of trends of incidence and their relation to trends of life styles, risk factors, and treatments; and standardization of methods of measurement.

Evidence of marked geographic variation in mortality attributed to coronary heart disease and cerebrovascular disease has been noted for more than 30 years in the southeast. The existence of a high mortality zone extending through the coastal plains, and an area of very low cardiovascular disease mortality, namely in the mountainous areas, has been identified. Since 1968, the southeast region of the US has shared in the general decline in cardiovascular disease mortality exhibited by the entire nation. Our analyses suggest that this decline has occurred among all adult age groups, for both men and women, and for whites and blacks. However, there is evidence of differences in the rate of decline among these demographic subgroups, with the greatest percent decline having occurred in the black female and the least in the white female. There also is the suggestive evidence in analysis of trends within subregions of NC that the previously high-rate, coastal plains region, has experienced a lesser percent decline than the previously low-rate, mountain area.

The communities under study in North and South Carolina are biracial in composition, with a large proportion of black residents, and include both rural and urban communities. Two of the communities are located in the highest cardiovascular disease mortality region of the nation, counties in the NC coastal plains with approximately equal numbers of black and white residents, and residents of the Columbia, South Carolina SMSA, with approximately one-quarter black residents. The third community is comprised of residents of North Carolina Appalachian mountain counties, a region of previously low cardiovascular disease mortality risk with predominantly white residents. (Tyroler, Becker, Haynes, Heiss)

Type A Behavior and Atherosclerosis in Men and Women. Previous research from the Framingham Heart Study has demonstrated an increased risk of coronary heart disease among men and women exhibiting Type A behavior, as measured by a short ten-item questionnaire on time urgency and competitiveness. The Framingham Type A Behavior was most strongly associated with coronary diagnoses in which angina pectoris symptoms were present. This research project is designed to determine whether or not these associations reflect actual coronary atherosclerosis in the presence of anginal pain. Since 1978, approximately 300 women and 700 men who underwent angiography at the Duke University Hospital were administered the Framingham Type A scale along with several other psychosocial questionnaires. The association of the Framingham scale with the severity of arteriographically documented atherosclerosis will be examined in both men and women employed in a variety of occupational settings. In addition, the validity of the Framingham questionnaire for assessing Type A behavior as compared to the Friedman-Roseman Structured Interview will be examined, along with its potential uses in clinical practice and research. (Haynes).

Type A Behavior, Employment Status, and Coronary-Heart Disease in Women. The objective of this research is to determine the relationship of employment status and employment-related behaviors, such as Type A behavior to the development of coronary heart disease (CHD) in women residing in the

southeastern US. The effect of employment, particularly employment in white-collar and clerical jobs, will be examined in two prospective studies. Extensive sociological data collected on 1121 women in the Evans County Cardiovascular Study will be used to relate employment status to 15-year mortality rates from CHD. In addition, CHD incidence and mortality rates between 1975-1980 will be computed for 340,000 women residing in three communities in North and South Carolina, as part of a national pilot study for community surveillance of cardiovascular disease. The validity of using questionnaire and interview methods in assessing Type A behavior in women will be examined using voice analysis of interviews given to Framingham cohort women and to women in the Duke Angiography study. The relationship of various measures of Type A behavior to angiographically diagnosed coronary disease will then be examined among women in the Duke study, according to occupational status. (Haynes).

Comprehensive Stroke Center Program. A study of hospitalized stroke outcomes in 15 counties of eastern North Carolina, this study is based on the evaluation of outcomes before and after the introduction of a Stroke Team in 20 community hospitals. The North Carolina program is participating with investigators in Oregon and New York in a national stroke study. (Becker)

Effects of Contraceptive Steroids on Blood Pressure. In a study of 990 women attending Family Planning Clinics in SE Georgia, the effect of oral contraceptives on blood pressure is under investigation. Current analyses reveal no increase in diastolic blood pressure among black women who use oral contraceptives as compared to black women who use other non-oral contraceptive forms of birth control. There is a slight increase in the risk of elevated diastolic blood pressure in white women using oral contraceptives, apparent only among white women 22 years of age or older. (Becker)

Cardiovascular Epidemiology and Statistics. This research training program provides course work leading to the degree of Doctor of Philosophy in either epidemiology or biostatistics by combining the strong, accredited academic curricula of both

Departments 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 and biostatistics, 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 post-doctoral experience in cardiovascular disease research in both departments in addition to Ph.D. level training. 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

Retrospective and Prospective Cohort Studies of Two Communities Exposed to Aerial Spraying of Herbicides: Investigation of Possible Health Effects. The aim of this study is to determine whether a community exposed to aerial spraying experienced unusual health effects after the spraying and to document the magnitude of these effects, if any. Questionnaires will be administered to 180 study subjects, half of whom were exposed to aerial spraying. Results will be analyzed to evaluate the feasibility of such studies on a larger scale. (Shy).

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, Tyroler, Checkoway)

Mortality Study of Radiation-Exposed Workers.

Three sub-projects (see above) underway are a mortality study of 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).

Cooperative Health Hazard Evaluation Program.

The Occupational Safety and Health Act of 1970 places on the National Institute for Occupational Safety and Health (NIOSH) the responsibility to conduct health hazard evaluations upon valid request by an employer and/or employees. This was the third year of a three-years demonstration program of health hazard evaluations performed by the Occupational Health Studies group (OHSG) of the School of Public Health. In the first year, health hazard evaluations involving a heat set fabric molding operation, a printing process, an aircraft fuel cell manufacturing operation, a university office building, and an analytic chemistry laboratory, have been assigned to the UNC Research group by NIOSH. Some eight to ten additional assignments of a similar nature were made during the year. (Checkoway, Shy).

Mortality Study of Workers in the Florida Phosphate Industry. This is a retrospective cohort mortality study of approximately 25,000 employees in the phosphate industry in Florida. This industry manufactures fertilizers and component materials such as phosphoric acid. The original concern in the industry was an apparent excess of lung cancer mortality, presented to be related to ionizing radiation exposure.

The mortality patterns of industry workers will be compared with those of the US and Florida populations for the years 1950-78. Excesses from cause-specific mortality will be examined in relation to work experience and estimated exposures to chemicals and ionizing radiation. Preliminary findings show roughly 50% mortality excesses from lung cancer and emphysema. Analysis are being continued. (Checkoway, Shy).

A Project to Evaluate Existing and Potentially New Health Data Reporting Systems in North Carolina and to Evaluate Their Suitability as a Monitor of Adverse Health Effects from Population Exposure to Toxic and Hazardous Pollutants. This project has been designed primarily to address the issue of a comprehensive functional statewide cancer incidence registry. The Department of Epidemiology will assist the Division of Health Services to (1) review the state of knowledge on the application of different health reporting systems to surveillance of environmental health hazards; (2) review in depth the activities of the current cancer registries in North Carolina and compare these activities to two or three other states known to have well functioning cancer reporting systems, especially those that include data on environmental and occupational exposures; (3) assess the feasibility and costs of developing and implementing a functional comprehensive statewide cancer incidence reporting system; (4) review current data collection instruments and modify them or develop new data collection instruments for acquiring information on environmental and occupational exposures of entrants to the cancer incidence reporting system and (5) prepare a final report which (a) assesses the feasibility and costs and benefits of establishing a functional comprehensive cancer incidence



reporting system and limited follow-up system in North Carolina and (b) makes recommendations with respect to establishment of these health data systems. (Shy).

Modification of CDC Health Risk Appraisal Instrument for Blue Collar Workforce The purpose of this project is to modify the CDC Health Risk Appraisal (HRA) instrument for use with a blue collar workforce. HRA is a process which incorporates computer analysis of an individual's family and personal health history, personal choice behaviors (alcohol and tobacco use, seat belts, exercise levels, etc.) and basic biomedical tasks (blood pressure, cholesterol, pap, proto, etc.). The individual is provided printouts which compare him or her to the average for their age, race, and sex in terms of potential health risk. We are planning to target use of HRA at blue collar worker populations. This project will benefit the School of Public Health and the Department of Epidemiology by providing a means for developing expertise and experience in analyzing problems of critical or special interest to them, with potential for future development. (Shy, James).

#### POPULATION

Relative Merits of Family Planning and Development in Reducing Fertility. In this research project, the contribution of development and family planning to the direct and immediate reduction of fertility is assessed. A statistical analysis of demographic and social data being collected in 15 countries throughout the world will test the significance of the interaction between mortality, fertility, socio-economic development indicators, and family planning. (Omran).

An Epidemiologic Case for Family Planning in Africa. Using African demographic and health parameters, this study is examining the health risks associated with unplanned fertility, teenage pregnancy, pregnancy after 35, short birth intervals, and multiparity. The project will clarify the basis for a health rationale in favor of family planning in both Moslem and Christian countries (Omran).

## PSYCOSOCIAL EPIDEMIOLOGY

Social and Community Ties as Predictors of Longevity. This project seeks to replicate and extend Berkman and Syme's observation that social and community ties were associated with reduced mortality among residents of Alameda County, California. Such ties may be particularly important for the elderly, who are simultaneously at greater risk of major illness and of loss of social ties.

We are analyzing data collected in the Evans County Cardiovascular and Cerebrovascular Epidemiologic Study, a major investigation conducted by the Department of Epidemiology in collaboration with Dr. Curtis Hames of Evans County, GA. This continuing investigation has been the source of many publications during over 20 years. Vital status follow-up has continued since the last re-examination of the cohort, in 1967. Our analysis will employ measures of marital status, friends and relatives, and church activities obtained in a sociological questionnaire administered in the 1967 examination. We will use survivorship analysis methods to examine the relationship between a social network index and mortality. The index will be constructed to replicate, as nearly as possible, that created by Berkman and Syme. We will also control the analysis for major risk factors, including systolic blood pressure, cigarette smoking, serum cholesterol, presence of clinical cardiovascular disease or diabetes, overweight, physical exercise, and social status. (Schoenbach, Kaplan, Kleinbaum).

The Social Psychological Aspects of a Controlled Clinical Trial to see the Mortality/Morbidity Effectiveness of Behavior Modification on Type A Behavior in Post-MI Patients. In collaboration with the Harold Brunn Institute of Cardiology, Mt. Zion Hospital, San Francisco, CA. A group at Stanford University is also involved. (Kaplan).

## OTHER

National Evaluation of Rural Primary Health Care Programs. Faculty members in the Department of Epidemiology, in conjunction with the UNC Health Services Research Center, are conducting a national evaluation of different models of rural primary care delivery. The study, which is supported by the Robert Wood Johnson Foundation, is tied to household survey research being conducted by the Department of Health, Education, and Welfare. Information helpful in health policy formation is being developed by establishing relationships between the characteristics of services in each type of model and the degree of the model's success in meeting specific social and health goals. The study is examining such outcome variables as service cost, service accessibility, consumer perceptions of care and practice stability, as well as several health indicators. (Sheps)

Incidence of Severe Trauma and Burns in North Carolina. The North Carolina Trauma and Burn Study is a record review of current severe injury in the State. All trauma and burn patients entering the Emergency Department of 24 selected hospitals Champion Trauma Scores of 15 or less are eligible for the Study, including deaths. The 12 major hospitals (Level I and II) are in the Study plus a random selection of community hospitals (Level II-III and III) that have 24-hour emergency service, stratified by Health Service Areas in order to represent the entire state.

A two-page questionnaire will be completed on each eligible patient, providing demographic and descriptive information. For burns, an additional one-page description of the percent of the body involved in second and third degree burns will be completed. At the time of discharge, or one-month from admission, whichever comes first, three questions will be answered: an estimate of the disability, place of disposition and presence of complications with risk of life and/or risk of prolonged hospitalization. The physician who cared for the patient will be asked one question regarding potential use of air transport.

The Study will cover 6 months or approximately 2000 cases of trauma in all, with approximately 300-400 cases in each Health Service Area.

(Becker)

Clinical Evaluation of Licensed Multiple Puncture Devices for the Administration of Tuberculin. Under a subcontract with the University of Kentucky, six devices for the delivery of tuberculin skin tests are being compared to the standard Mantoux test in populations in four sites: North Dakota, Kentucky, and Texas. Field work is complete and analysis is in progress. (Becker).

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

Cancer Epidemiology Training. National Cancer Institute; 08/31/85 (Hulka).

Cancer Risk Among Atomic Workers. Oak Ridge Associated Universities; 09/30/84 (Shy).

Cardiovascular Epidemiology and Statistics. National Heart, Lung and Blood Institute; 06/30/85 (Tyroler).

Community Surveillance in the Southeastern United States. National Heart, Lung and Blood Institute; 06/30/84 (Tyroler).

Geographic and Temporal Variation in Mortality, and Development of Health Indices in Relation to Environmental Quality; 12/31/88 (Tyroler).

Hormone Receptors and Serum Assays in Prostatic Cancer; 2/28/85 (Hulka)

Incidence and Severity of Trauma and Burns in North Carolina. NC Dept. of Human Resources; 12/30/83; (Becker).

Job Characteristics, Perceived Control and CHD; 12/31/83 (LaCroix).

Modification of CDC Health Risk Appraisal Instrument for Blue Collar Workers; 1/15/85 (Shy).

(A) Project to Evaluate Existing and Potentially New Health Data Reporting Systems in NC; 04/15/85 (Shy).

Pharmaco-Epidemiology Post-Doctoral Fellowship; 9/30/84 (Hulka).

Pilot Evaluation Studies of High Blood Pressure Control. National Heart, Lung and Blood Institute; 01/31/85 (Ibrahim).

Psychosocial Factors Related to Risk and Control of HBP among Black Men; 6/30/87 (James).

Predictors of IHD in Blacks (Charleston Heart Study); 12/31/84 (Tyroler).

Respiratory Disease in the Furniture Industry.  
Institute of Occupational Safety and Health;  
12/31/83 (Shy, Goldsmith)\*.

Retrospective and Prospective Cohort Studies of  
Two Communities in Chatham Co. exposed to Aerial  
Spraying of Tordon. Investigation of Possible  
Acute Health Effects; 06/30/84 (Shy).

Social and Community Ties as Predictors of  
Longevity; National Institute of Aging; 02/29/84  
(Schoenbach).

Social/Work Roles and Health Indicators in  
Women. University Faculty Research  
Grant/University Research Council; 11/10/83;  
(Williams).

Symptom Reports and Mortality in Paper Workers;  
06/30/84 (Logue).

Type A Behavior and Atherosclerosis in Men and  
Women; Amer. Heart Assoc.; 6/30/84 (Haynes).

Type A Behavior, Employment Status, and CHD in  
Women; 06/30/85 (Haynes).

## C. Notable Publications of Faculty.

**Harvey Checkoway**

Checkoway H, Mathew RM, Wolf SH, et al.: Mortality among workers at the Oak Ridge National Laboratory. In: Epidemiology Applied to Health Physics, Proceedings of the Health Physics Society, pp. 90-104, 1983.

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**Suzanne G. Haynes**

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

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#### **Sherman A. James**

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### **Victor J. Schoenbach**

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### **Carl M. Shy**

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### **Herman A. Tyroler**

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**Carolyn A. Williams**

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## D. Papers presented by faculty.

**Suzanne G. Haynes**

Kuczmariski R, Graves K, Haynes, SG: Food usage among adolescents. The Lipid Research Clinics (LRC) Program. Society for Nutrition Education, Denver, CO, July 11, 1983.

LaCroix, A. and Haynes, SG: Job Characteristics, Perceived Control, and Health. 111th Annual Meeting of the American Public Health Association, Dalls, TX, November 1983.

**Barbara S. Hulka**

"Exogenous Estrogens and Cancer" at Estrogen Workshop of the National Institutes of Health, Washington, D.C., 9/13-14/83.

"Estrogen Use After The Menopause: Risks and Benefits" at Westminster Hospital, London, England, 9/21/83.

"Exogenous Estrogens for Postmenopausal Women: Risks and Benefits" at St. Thomas' Hospital, London, England, 9/22/83.

"The Epidemiology of Breast Cancer and Estrogen Receptors" at Grand Rounds, Department of Obstetrics and Gynecology, UNC School of Medicine, 9/23/83.

"Epidemiology of Carcinoma of the Breast", Grand Rounds at Bowman Gray for The Piedmont Oncology Association meeting, Winston-Salem, N.C., 1/11/84.

"Hormone Receptors and Breast Cancer in Women" at Department of Epidemiology, Graduate School of Public Health, University of Pittsburgh, Pittsburgh, PA, 3/8/84.

"Hormonal and Personal Effects on Estrogen Receptors in Breast Cancer", American Society for Preventive Oncology, New York, N.Y., 3/20/84.

"Estrogens for Women: Yes or No?", Medical Alumni Weekend, UNC School of Medicine, 3/20/84.



"Estrogen Use in Postmenopausal Women - An Overview of the 1979 Consensus Development Conference on Estrogen Use and Postmenopausal Women", Fertility and Maternal Health Drugs Advisory Committee of the Food and Drug Administration, Bethesda, MD, 4/27/84.

"Cancer Occurrence in Relation to Replacement Estrogens", Karolinska Institutet, Stockholm, Sweden, 5/25/84.

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**Michel A. Ibrahim**

Ibrahim: M.A. The declining mortality from cardiovascular diseases: Medical care on life style? The American Heart Association, North Carolina Affiliate. Durham, NC June 23, 1984.

Ibrahim, M.A.: Health Promotion in North Carolina. The Spring Workshop for Local Health Department Directors. Chapel Hill, NC. June 1, 1984.

Ibrahim, M.A.: Health Promotion and Disease Prevention: The Role of the UNC-CH School of Public Health. North Carolina Academy of Preventive Medicine. Chapel Hill, NC December 7, 1983.

Ibrahim, M.A.: Classic and Clinical Epidemiology: Is there a distinction? Duke University Clinical Investigation Seminar Series. Durham, NC September 20, 1983.

**Sherman A. James**

James SA: Coronary heart disease in Black populations: Type A behavior and other psychosocial factors. Presented at the Symposium on CHD in Black Populations, sponsored by the Council of Epidemiology, American Health Association, San Diego, California, March 5, 1983.

James SA, Wagner EH, Beresford SAA, Strogatz D, et al: The Edgecombe County high blood pressure control program: II. Barriers to the use of medical care. Presented at the National Conference on High Blood Pressure Control. Washington, DC, April 21, 1983.

Williams CA, James SA, Beresford SAA, Strogatz D, et al: The Edgecombe County High Blood Pressure Control Program: Psychosocial factors and hypertension treatment and control status. Presented at the National Conference on High Blood Pressure Control, Washington, DC, April 21, 1983.

Beresford SAA, James SA, Lewis GE, Strogatz D, et al: The Edgecombe County high blood pressure control program: High blood pressure control in industry. Presented at the National Conference on High Blood Pressure Control, Washington, DC, April 21, 1983.

James SA: Socioeconomic Influences on CHD in Black Populations. Presented at the NHLBI Working Conference on CHD in Black Populations, Bethesda, MD, September 28-30, 1983.

Strogatz DS, James SA, Wagner EH, Beresford SAA, Williams CA, Cutchin LM, Ibrahim MA: High Blood Pressure Prevalence and Control in Edgecombe County, NC. Presented at the Ninth Southeastern High Blood Pressure Control Conference, Biloxi, Mississippi, October 5-7, 1983.

**Victor J. Schoenbach**

N.C. Society for Public Health Education:  
"Health Hazard Appraisal Instruments: Pros and Cons", 1982.

## IV. PUBLIC SERVICE

**Caroline Becker**Department Activities:

Grader, Masters Comprehensive Examination  
 Equal Employment Opportunity Officer  
 Member, Admissions Committee  
 Member, Ad Hoc Space Committee  
 Member, Faculty Recruitment Committees  
 Chair, Seminar Committee

School Activities:

Member, Administrative Board of the School of  
 Public Health, September 1982-August 1983.  
 President, Delta Omega (Public Health honorary  
 society).

University Activities:

Member, AAUP Committee for Women, 1982-  
 Elected Secretary-Treasurer, Elisha Mitchell  
 Scientific Society, April 1979-1983.

State Activities:

Participant, NC 2000  
 Treasurer, American Heart Association, NC  
 affiliate.  
 Lecturer in Neurology, Bowman-Gray School of  
 Medicine,  
 Consultant, American Heart Association, North  
 Carolina Affiliate, in various research  
 projects and standing committees.  
 President, Board of Home Health Agency of Chapel  
 Hill, NC, 1982-1984.

National Activities:

Member, Johns Hopkins University National Alumni  
 Schools Committee, 1979- .  
 Coordinator, Joint Center for Disease  
 Control/Association of Schools of Public  
 Health Epidemic Field Investigations, 1980- .  
 National Secretary-Treasurer, Delta Omega  
 Society, 1981-.

**Harvey Checkoway**Department Activities:

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

**Harvey Checkoway (continued)**National Activities:

Consultant, National Institute of Health, Special Studies Section. Site visit for proposed study of Acquired Immune Deficiency Syndrome. (1983)

Consultant: Law firm of Milbank, Hadley, Tweed and McCloy, New York, NY. Scientific critique of projections of future occurrence of asbestos-related diseases prepared for unsecured creditors of Johns Manville Corporation. (1983-84)

Consultant: National Academy of Sciences, Institute of Medicine, Washington DC. Review of Public Health Task Force proposal and conduct of study of Reye Syndrome and medication use (1983-84)

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).

**Suzanne G. Haynes**Department Activities:

Grader, Doctoral Qualifying Examination.  
Chairperson, Doctoral Qualifying Examination, Spring 1984

National Activities:

Executive Committee Member and Fellow, American Heart Association Council on Epidemiology.  
Fellow, Academy of Behavioral Medicine.  
Fellow, American College of Epidemiology (Ad Hoc Reviewer for nominations committees).

Consulting Editor, Behavioral Medicine Abstracts.

Executive Committee, Society for Epidemiologic Research, Nationally elected, 1983-1986.  
Faculty Member, Amherst Epidemiology Institute, Summer 1984.

**Gerardo Heiss**Department Activities:

Chairman, Doctoral Qualifying Examination  
Committee (Fall 1982).  
Member, Graduate Studies Committee.

National Activities:

Member, Data Review Board of the Ultrasound  
B-Scan Assessment Program, NIH Devices and  
Technology Branch.  
Member, Lipid Research Clinics Program  
Committees: Prevalence Study Executive  
Committee, Epidemiology Committee,  
Cardiovascular Liason Group.

International Activities:

Member, Lipid Research Clinics Jerusalem  
Steering Committee.  
On-Site Collaborative Analysis at the Jerusalem  
Lipid Research Clinic, Hadassah University  
Hospital, Ein Kerum, Jerusalem, Israel.  
3/15/83-6/14/83.

**Barbara S. Hulka**School Activities:

Chairperson, Search Committee to Recruit new  
Chairman for the Department of Health  
Education.

University Activities:

Member of Research Publications Advisory  
Committee, The Graduate School.  
Member, Administrative Board, School of Pharmacy  
Member, Search Committee to Recruit Faculty  
Member in Aging and General Internal Medicine,  
School of Medicine  
Member, Search Committee to Recruit Faculty  
Member, Division of Infectious Diseases,  
School of Medicine  
Member, Education Policy Committee, UNC  
Member, Committee to Review Institutional Grants  
of the American Cancer Society, UNC.

State Activities:

Chairperson, Statistics and Epidemiology  
Section, North Carolina Public Health  
Association, Inc.

**Barbara S. Hulka (continued)**National Activities:

Member, Health Services Research & Development Scientific Review and Evaluation Board of Veterans' Administration.

Member, Advisory Board for 12th Edition of Public Health and Preventive Medicine.

Chairperson of the Board of Scientific Counselors to the National Cancer Institute, Division of Cancer Prevention and Control.

Member, National Academy of Sciences Committee on Epidemiology and Veterans Follow-up Studies.

Member, Health Services Research, editorial board.

Member, Advisory Committee, Environmental Trends Initiative of the Hospital Research and Educational Trust.

Member, National Advisory Committee on Cancer Detection, American Cancer Society.

Attended Society for Epidemiologic Research Annual Meeting and was a faculty participant in the Student Workshop, Winnipeg Canada on 6/13-17/83.

Participated in the Conference on Primary Care Epidemiology for the Health Resources and Services Administration of the Department of Health and Human Services, Rockville, MD, 8/30-31/83.

Participated in the Breast Cancer Task Force Committee meeting for the National Cancer Institute, Bethesda, MD, 9/12/83.

Participated in a Site Visit, Harvard University School of Public Health, (for the National Cancer Institute), Boston, MA, on 9/25-27/83.

Participated in a workshop on The Epidemiology of Insulin-Dependent Diabetes Mellitus, for the American Juvenile Diabetes Associate, Philadelphia, PA, 10/24-26/83.

Attended American Epidemiologic Society Annual Meeting, Philadelphia, PA, 3/22-23/84.

Participated in Fertility and Maternal Health Drugs Advisory Committee discussion of Estrogen Product Labeling, Bethesda, MD, 4/27/84.

Participated in meeting of the Committee to Evaluate the NICHD Contraceptive Development and Evaluation Programs of the National Institutes of Health, Bethesda, MD, 6/11/84.

**Barbara S. Hulka (continued)**International Activities:

Lectured and talked with faculty at Department of Community Medicine at Victoria Health Authority and St. Thomas' Hospital Medical School, London, England, 9/18/21, 1983.

Lectured and talked with epidemiologists and other researchers involved with population-based studies of cancer at the Karolinska Institutet, Stockholm, Sweden, 5/21-25/84.

**Michel A. Ibrahim**University Activities:

Member, UNC Health Services Research Center Policy Board.

State Activities:

Member, Board of Directors, American Heart Association, North Carolina Affiliate.

President, American Heart Association, NC affiliate, May 1983-May 1984.

National Activities:

Member, Aging Review Study Section, National Institute on Aging, July 1983-

Consultant, National Cancer Institute

Consultant, National Institute on Aging.

Consultant, National Heart, Lung and Blood Institute.

Consultant, National Institute of Child Health and Human Development.

Consultant, National Institute on Alcohol Abuse and Alcoholism.

Chairman, Policy Committee for the Five Hypertension Demonstration Projects, NHLBI, 1981- .

Editorial Consultant, Journal of Chronic Diseases.

Chairman, Editorial Board, Am. J. of Public Health.

Member, Editorial Advisory Board, Family Medicine Review.

Member, American College of Epidemiology Board of Directors.

International Activities:

Consultant, WHO.

**Sherman A. James**

Department Activities:

Chairman, Graduate Studies Committee.

School Activities:

Member, Search Committee for Chair for  
Epidemiology

Member, Dean's Ad Hoc Committee on Health  
Promotion and Disease Prevention.

Member, Search Committee for Chair of Health  
Education.

University Activities:

Member, SPH Graduate Programs Committee  
(1983-86).

Member, Advisory Committee to the Chancellor.

Member, Administrative Board of Graduate School.

National Activities:

Member, Editorial Board, Medical Care.

Member, Epidemiology Study Section, NIMH.

Member, Planning Committee for the NHLBI Working  
Conference on CV Disease Risk Factors in  
Blacks.

Consulting Editor, Behavioral Medicine  
Abstracts.

International Activities:

Fellow, First Advanced Seminar in Cardiovascular  
Disease Epidemiology, Helsinki, Finland.

**Berton H. Kaplan**

Department Activities:

Chairman, Graduate Studies Committee, 1984-  
Grader, Doctoral Qualifying Examination.

School Activities:

Member, Academic Promotions and Appointments  
Committee, 1982-

University Activities:

Chairman, University Committee on Established  
Lectures, 1983-85.

Member, Self Study for Accreditation Task  
Force 5.



**Berton H. Kaplan (continued)**National Activities:

Grants Advisor to the William T. Grant Foundation.

Member, Editorial Boards:

Journal of Human Stress

Journal of Behavioral Medicine

Family Medicine Review.

Reviewer, American Journal of Epidemiology  
Social Forces.

Member, Institute of Medicine Study Group on the Health Consequences of Bereavement.

Member of the Psychosocial Advisory Group to the American Cancer Society.

National Science Foundation Grant Advisor, 1980-

**Victor J. Schoenbach**Department Activities:

Ad hoc space committee, June 1984

Member, Graduate Studies Committee, November 1982 - (plus previous informal involvement in graduate studies issues).

Masters Examination Committee, January 1982 - (Chairman, January 1982 - July 1984)

Have helped to develop TA policy and organize recruitment and allocation of TA's for introductory EPID courses.

Advise on computing -- VAX and epidemiologic (including STRAT2 computer program available to EPID students and sent out in response to requests from outside researchers).

Prepared report on foundation funding opportunities, April 1984

Faculty Coordinator of Departmental Technical Sessions for SPH Alumni Conference, December 1983 - [never met]

School Activities:

CADPAC Committee, September 1983 -

Lecture in SPH Alumni Conference Technical Session on "Translating Science to Social Action in Health Promotion and Disease Prevention", March 29, 1984.

University Activities:

Moderator, Working Group Session on "Health Promotion/Disease Prevention Research and Evaluation" at the Fifteenth Anniversary Forum on Health Services Research, December 16, 1983.

**Victor J. Schoenbach (continued)**State Activities:

- 1983 WRAL-TV, Channel 5, Raleigh NC -- Panelist on "Pro & Con: Smokers' Rights".
- 1983 North Carolina Academy for Preventive Medicine -- "Appraising Health Risk Appraisal"
- 1984 Aid Association for Lutherans, Appleton, Wisconsin -Consultant on health promotion programming.
- 1984 WRAL-TV, Channel 5, Raleigh NC -- Panelist on "Pro & Con: Tobacco and Health II".
- Chairman, Transportation Advisory Board, Town of Carrboro, N.C., 1980-1984

National Activities:

- Member, Standing Review Committee, Health Services Research and Development Field Program, Veterans Administration Medical Center, Durham, NC.
- Consultant, Health Promotion/Disease Prevention Program, W.K. Kellogg Foundation (Through Health Services Research Center).
- American College of Epidemiology (1983- ),
- Member of Task Force for Statistics Questions of Committee on Examination (1984- )

**Carl M. Shy**Department Activities:

- Member, Admissions Committee.
- Grader, Doctoral Qualifying Examination.

School Activities:

- Member, Biomedical Sciences Research Support Grant Committee.

National Activities:

- Member, Board of Scientific Counselors, Division of Cancer Cause and Prevention, National Cancer Institute.
- Member, Clinic Hazards Advisory Panel on Asbestos, Consumer Product Safety Commission.
- Chairman, Site Visit Committee to the Environmental Epidemiology Branch, National Cancer Institute.

**Herman A. Tyroler**

Short Courses:

Minnesota Summer Institute, Cardiovascular  
Disease Epidemiology.

USA-Federal Republic of Germany Training Seminar  
in Epidemiology and Biostatistics, West  
Germany

Department Activities:

Chairman, Admissions Committee.

Grader, Doctoral Qualifying Examination.

School Activities:

Member, Occupational Safety and Health Education  
Resource Center Planning and Executive  
Committee.

Member, Greenberg Prize Committee

University Activities:

UNC Self-Study: Member, Task Group IV "Assessing  
the Quality of Research

State Activities:

Member, High Blood Pressure Committee, North  
Carolina Heart Association.

North Carolina 2000, Commission on the Future of  
North Carolina.

National Activities:

National Academy of Science; Member, Institute  
of Medicine; Member, Committee on Planning  
Study for an Ongoing Study of Costs of  
Environment-Related Health Effects.

Consultant, National Heart, Lung, and Blood  
Institute, Department of HHS for Lipid  
Research Clinics Program, Hypertension  
Detection and Follow-up Program, Multiple Risk  
Factors Intervention Trials, Systolic  
Hypertension in the Elderly Program.

Chairman, American Heart Association, Council on  
Epidemiology.

Member, National Institutes of Health  
Epidemiology and Disease Control Study  
Section.

**Herman A. Tyroler (continued)**

National Institutes of Health Workshops:

"Quality of Life in Clinical Trials of Cardiovascular Therapies" Bethesda, Maryland, June 1983.

"Coronary Heart Disease in Black Populations" Bethesda, Maryland, September 1983.

"Measuring Psychosocial Variables" Galveston, Texas, December 1983.

"Strategies for Minimizing Coronary Heart Disease in Black Populations" Bethesda, Maryland, February 1984

"Research Developments in Mild Hypertension" Bethesda, Maryland, May, 1984.

International Activities:

Steering Committee Member, Arteriosclerosis: US-USSR, US-Israel, US-Poland, US-Germany.

Consultant, World Health Organization- International Agency on Research of Cancer.

## V. FACULTY

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

## 1. Full-Time Faculty

Caroline Becker  
 Associate Professor  
 Harvey Checkoway  
 Research Assistant Professor  
 John T. Fulton  
 Professor Emeritus  
 Suzanne G. Haynes  
 Research Assistant Professor  
 Gerardo Heiss  
 Research Associate Professor  
 Barbara S. Hulka  
 \*Professor & Chairperson, EPID  
 Clinical Assoc. Prof., Family Medicine  
 Michel A. Ibrahim  
 DEAN, School of Public Health  
 \*Professor, Epid.  
 Professor, Soc. & Admin.Med.  
 Sherman A. James  
 \*Associate Professor, Epid.  
 Clinical Associate Prof., Psychology.  
 Berton H. Kaplan  
 Professor  
 David G. Kleinbaum  
 Professor of Biostatistics  
 Abdel R. Omran (Resigned 1/18/84).  
 Professor  
 Victor J. Schoenbach  
 Research Assistant Professor  
 Cecil G. Sheps (Retired 6/30/84)  
 Professor, Epid.  
 \*Professor, Soc. & Admin.Med.  
 Carl M. Shy  
 \*Professor, Epid.  
 Professor, Envir.Sci.& Engineer.  
 Clinical Professor, Fam.Med.  
 Herman A. Tyroler  
 Alumni Distinguished Professor  
 Edward H. Wagner (Promoted 7/1/84)  
 Professor, Epid. (Resigned 10/14/83)  
 \*Professor, Medicine  
 Carolyn A. Williams  
 \*Associate Professor, Epid.  
 Associate Professor, Nursing

## 2. Part-Time Faculty

Gory (Bud) J. Love  
 Research Associate Professor  
 Cecil G. Sheps (effective 7/1/84)  
 Professor, Epid.  
 \*Professor, Soc. & Admin.Med.

## 3. Visiting Faculty

Bruce B. Duncan  
 Visiting Assistant Professor (Resigned  
 10/83)  
 Lars-Goran Ekelund  
 Visiting Professor (Resigned 6/30/84)  
 Timothy C. Wilcosky  
 Visiting Assistant Professor (end of  
 appointment 6/30/84)

## 4. Adjunct and Fixed-Term Joint Appointments

Dragana Andjelkovich  
 Adjunct Associate Professor, Epid.  
 Shirley A. Beresford  
 Adjunct Assistant Professor  
 Brian A. Boehlecke  
 Clinical Associate Professor  
 Joan Cornoni-Huntley  
 Adjunct Associate Professor  
 Lawrence M. Cutchin  
 Clinical Associate Professor, Epid.  
 Clin. Assoc. Prof., Med. & Fam. Med.  
 \*Adjunct Assoc. Prof., Soc. & Admin. Med.  
 Gordon H. DeFriese  
 Clinical Professor, Epid.  
 \*Professor, Social & Admin. Med.  
 Robert H. Fletcher  
 Clinical Professor, Epid.  
 \*Professor, Medicine  
 Suzanne W. Fletcher  
 Clinical Professor, Epid.  
 \*Professor, Medicine  
 H. Hugh Fudenberg  
 Adjunct Professor  
 Stephen H. Gehlbach  
 Adjunct Associate Professor  
 Richard C. Graves  
 Research Associate Professor  
 Raymond S. Greenberg  
 Adjunct Assistant Professor  
 Seymour Grufferman  
 Adjunct Associate Professor

Kathryn Magruder Habib  
Adjunct Assistant Professor

Curtis G. Hames  
Clinical Professor

Carl G. Hayes  
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.

Samuel M. Putnam (resigned 6/15/84)  
Adjunct Assistant Professor, Epid.  
\*Associate Professor, Med.

Sheldon M. Retchin  
Clinical Assistant Professor, Epid.  
\*Assistant Professor, Med.

Walter J. Rogan  
Adjunct Assistant Professor

Seth A. Rudnick (terminated 6/30/84)  
Adjunct Assistant Professor

Desmond K. Runyan  
Clinical 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  
 Michael R. Swift  
 Clinical Professor, Epid.  
 \*Professor, Med.  
 Hugh H. Tilson  
 Adjunct Professor  
 Ramon Velez  
 Adjunct Assistant Professor  
 Edward H. Wagner  
 Clinical Professor  
 Allen J. Wilcox  
 \*Adjunct Assistant Professor  
 Bonnie C. Yankaskas  
 Adjunct Assistant Professor, Epid,  
 \*Research Assist. Prof., Radiology

B. Changes During the Year.

1. Additions, effective 1983-1984

Brian A. Boehlecke, Clin.Assoc.Prof.  
 effective 10/15/83  
 Richard C. Graves, Res.Assoc.Prof. effective  
 8/1/83  
 Raymond S. Greenberg, Adj.Assist.Prof.  
 effective 1/1/84  
 Richard J. Levine, Adj.Assoc.Prof. effective  
 1/1/84  
 Desmond K. Runyan, Clin.Assist.Prof.  
 effective 4/1/83  
 C. Gregory Smith, Adj.Assist.Prof. effective  
 10/15/83  
 Hugh H. Tilson, Adj.Prof. effective 5/1/84  
 Ramon Velez, Adj.Assist.Prof. effective  
 7/1/83  
 Bonnie C. Yankaskas, Adj.Assist.Prof.,  
 effective 10/15/83

2. Promotions, Effective 1983-1984.

Robert H. Fletcher, Clin. Prof., effective  
 7/1/83.  
 Suzanne W. Fletcher, Clin. Prof., effective  
 7/1/83.  
 Stephen H. Gehlbach, Adj.Assoc.Prof.  
 effective 7/1/83  
 Eugene S. Mayer, Adj.Prof., effective 1/1/84  
 George R. Parkerson, Adj.Assoc.Prof.  
 effective 9/1/83  
 Robert S. Sandler, Clin.Assist.Prof.,  
 effective 7/1/83  
 Edward H. Wagner, Professor, effective 7/1/83



3. Changes in Rank:

Bruce B. Duncan, from Visiting Assistant Professor to Adj. Assist. Prof. effective 10/15/83  
 Edward H. Wagner, from Professor to Clinical Professor effective 1/1/84

4. Leaves:

Carolyn Williams: Leave of Absence  
 2/1/83-6/30/84  
 Gerardo Heiss: Off-Campus Assignment.  
 Lipid Research Clinic, Jerusalem.  
 3/15/83-6/14/83.

5. Losses: Retirement, Resignation, Death.

Bruce Duncan, Visiting Assist. Prof. (Resigned 9/30/83: Appointed to Adjunct Faculty effective 10/15/83).  
 Lars-Goran Ekelund, Visiting Professor (Resigned 6/30/84).  
 Abdel R. Omran, Prof. (Resigned 1/18/84).  
 Samuel M. Putnam, Adj. Assist. Prof., Epid. (resigned 6/15/84)  
 Seth A. Rudnick, Adjunct Assistant Professor (terminated 6/30/84)  
 Cecil G. Sheps, Professor (Retired, 6/30/84: Appointed as Temporary, Part-time Professor effective 7/1/84)  
 Edward H. Wagner Associate Professor, Epid., (Resigned 10/14/83: Appointed to Clinical Faculty effective 01/01/84).  
 Timothy C. Wilcosky, Visiting Assistant Professor (End of Appointment 6/30/84).  
 Carolyn A. Williams, Associate Professor (Resigned 6/30/84)

C. Proposed Additions:

- 2 Positions at the rank of Assistant Professor in Health Services Research. Recommendations effective 9/1/84
- 1 Position at the rank of Associate Professor in Cardiovascular Disease Epidemiology. Recommendation effective 10/1/84.
- 2 Positions at the rank of Assistant Professor in Cancer Epidemiology to be effective prior to June 30, 1985.
- 1 Position at the rank of Assistant Professor in Reproductive Processes to be effective prior to June 30, 1985.

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

**Herman A. Tyroler:** Principal Investigator, "Geographic and Temporal Variations in Mortality in the United States", 5-year, \$1 million Contractual Agreement with the U.S. Environmental Protection Agency.

E. Special Assignments of Faculty.

**Herman A. Tyroler**

Press Conference Panelist; Lipid Research Clinics Program Coronary Primary Prevention Trial, Chapel Hill, NC, January 12, 1984.

**Barbara S. Hulka** Chairperson, Department of Epidemiology effective 7/1/83.

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

The 1983-84 year was the first year under the leadership of the new chairperson, Dr. Barbara Hulka. The primary goal was to complete recruitment of new faculty to replace faculty lost through resignation or death and to build existing programs in cardiovascular disease epidemiology, cancer epidemiology, and health services research. Recruitment efforts have been successful in the health services research and cardiovascular disease epidemiology programs, but the search for one or two cancer epidemiologists will continue in 1984-85. In addition, recruitment efforts have begun with the Carolina Population Center for a new faculty member to head up a new program in Reproductive Epidemiology.

The department was awarded a 5-year, \$1 million cooperative agreement with the U.S. Environmental Protection Agency to investigate geographic and temporal variations in mortality in the United States with a primary focus on cardiovascular diseases, and to study the health effects of selected environmental exposures, including the development of new indices of health effects. This program is directed by Dr. H.A. Tyroler. The goal of this research alliance is to increase our understanding of these chronic disease phenomena by identifying major demographic, socio-economic and environmental correlates.

TABLE 1

FALL 1982 ENROLLMENT BY DEGREE AND DEPARTMENT

Department	Ph.D.	Dr.P.H.	MPH	MSPH	MSEE	MS	BSPH	Total Regular Enrollment	Special Students
Biostatistics	32	16	11	5	-	16	19	99	8
Environmental Sciences and Engineering	35	-	-	79	21	7	12	154	-
Epidemiology	31-24	10	15-20	10-12	-	-	-	57-56	3-2-1
Health Policy and Administration	8	12	146	64	-	-	30	268	-
Health Education	7	5	61	5	-	-	25	103	1
Maternal and Child Health	-	8	24	4	-	-	-	36	1
Nutrition	-	11	52	-	-	-	26	89	-
Parasitology and Laboratory Practice	13	16	16	6	-	-	-	51	2
Public Health Nursing	-	-	29	3	-	14	-	43	3
TOTAL	126	69	354	173	21	37	120	900	-

1 Postdoctoral and visiting scholar students.

2 Includes 12 in the Goldsboro Off-Campus Program and 48 in the Hickory Off-Campus Program. Includes 19 in the Regional Degree I Program, 29 in Regional Degree Program II and 24 in Regional Degree Program III.

3 Includes 4 in the Hickory Off-Campus Program.

4 Special Non-Degree Student.

TABLE 2

FALL 1902 ENROLLMENT BY RACE, SEX, CITIZENSHIP AND DEPARTMENT\*  
(Includes graduate and undergraduate students)

Department	American Indian		Asian or Pacific Islander		Black		Hispanic		White		Foreign		Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Biostatistics	1	-	1	1	3	4	-0	-0	34	43	6	6	99
Environmental Sciences and Engineering	-	-	3	-	1	1	-	1	91	45	8	4	154
Epidemiology	0	1	1	0	44	43	0	0	2122	2020	23	33	5657
Health Policy and Administration	2	-	1	-	6	9	-	2	34	73	6	3	136
Health Education	2	-	-	7	-	13	-	1	17	59	1	3	103
Maternal and Child Health	-	-	-	-	-	3	-	-	5	26	1	1	36
Nutrition	1	2	-	3	2	10	-	2	16	52	-	1	89
Parasitology and Laboratory Practice	-	-	-	2	1	2	-	-	25	20	1	-	51
Public Health Nursing	-	-	-	-	-	6	-	-	1	30	-	2	39
Off-Campus Program	-	-	-	-	-	-	-	-	-	-	-	-	-
Health Policy and Administration	-	-	-	-	2	2	-	-	22	24	-	-	48
Hickory	-	-	-	-	-	-	-	-	2	8	-	-	12
Goldensboro	-	-	-	-	2	2	-	-	-	-	-	-	-
Regional Degree Program	-	-	-	-	1	2	-	1	5	11	-	-	20
I	-	-	-	-	2	1	-	-	17	9	-	-	29
II	-	-	-	-	2	1	-	-	9	12	-	-	24
III	-	-	-	-	-	-	-	-	-	-	-	-	-
Public Health Nursing	-	-	-	-	-	1	-	-	-	11	-	-	12
Hickory	-	-	-	-	-	-	-	-	-	-	-	-	-
Total	2	7	6	13	24	50	-	7	300	434	26	23	900

Only persons who are U.S. Citizens, U.S. Nationals, or admitted for permanent residence are included in one of the race or ethnic categories.

TABLE 3  
 FALL 1982 ENROLLMENT BY RESIDENCY AND DEPARTMENT  
 (Includes graduate and undergraduate students)

Department	In-State	Out-of-State	Foreign	Total
Biostatistics	46	41	12	99
Environmental Sciences and Engineering	58	84	12	154
Epidemiology	262 <sup>8</sup>	252 <sup>3</sup>	56	565 <sup>7</sup>
Health Policy and Administration	178	81	9	268 <sup>1</sup>
Health Education	56	44	3	103
Maternal and Child Health	17	17	2	36
Nutrition	42	46	1	89
Parasitology and Laboratory Practice	21	29	1	51
Public Health Nursing	27 <sup>2</sup>	14	2	43
Total	473	379	48	900

<sup>1</sup> Includes 12 in the Goldsboro Off-Campus Program and 48 in the Hickory Off-Campus Program. Includes 19 in Regional Degree Program I, 29 in Regional Degree Program II and 24 in Regional Degree Program III.

<sup>2</sup> Includes 4 in the Hickory Off-Campus Program.

TABLE 4

GRADUATES BY DEGREE--CLASSIFIED BY DEPARTMENT

August-1982 - May 1983  
1983 1984

Department	Ph.D.		Dr. P.H.		MPH		MSEE		MS		DSPH		
	Aug.	Dec.	Aug.	Dec.	Aug.	Dec.	Aug.	Dec.	Aug.	Dec.	Aug.	Dec.	
Biostatistics	5	3	1	4	1	3	1	7	4	1	2	1	10
Environmental Sciences and Engineering	-	3	2	-	-	-	-	12	7	3	3	1	3
Epidemiology	6	4	2	-	-	3	2	3	2	1	-	-	8
Health Policy and Administration	1	-	-	1	-	8	17	7	3	17	-	-	12
Health Education	-	1	1	-	-	2	19	-	1	1	-	-	8
Maternal and Child Health	-	-	-	-	-	17	6	4	-	1	-	-	3
Nutrition	-	-	-	1	1	18	3	-	-	-	-	-	9
Parasitology and Laboratory Practice	-	1	3	4	-	4	10	1	-	3	-	-	2
Public Health Nursing	-	-	-	-	-	11	5	3	-	-	-	3	-
Total	10	11	13	5	6	62	29	59	32	12	30	3	47

TABLE 5  
CHANGES IN COURSES AND CURRICULA  
1982-83

Department	New Courses	Deleted Courses	New Programs Planned	Honors & Other Special Programs	Interdepartmental Program
Biostatistics	1	-	-	-	Yes
Environmental Sciences and Engineering	8	9	-	1	Yes
Epidemiology	4	3	3	-	Yes
Health Policy and Administration	3	5	1	-	No
Health Education	4	-	-	-	Yes
Maternal and Child Health	2	-	-	-	Yes
Nutrition	1	-	-	-	Yes
Parasitology and Laboratory Practice	2	-	7	-	Yes
Public Health Nursing	1	-	-	-	No

TABLE 6  
TEACHING LOAD OF FACULTY CLASSIFIED BY DEPARTMENT AND SEMESTER  
1982-83 1983-84

	FALL SEMESTER, 1982-1983			SPRING SEMESTER, 1983		
	Number of Courses	Number of Students	Number of Faculty Teaching	Number of Courses	Number of Students	Number of Faculty Teaching
Biostatistics	46	424	25	42	252	24
Environmental Sciences and Engineering	40	442	23	45	425	28
Epidemiology	33	347	16	41	334	21
Health Policy and Administration	39	508	22	52	577	25
Health Education	35	335	15	51	523	33
Maternal and Child Health	9	116	9	10	135	3
Nutrition	19	200	9	20	213	11
Parasitology and Laboratory Practice	25	105	8	18	94	7
Public Health Nursing	12	69	6	17	130	5

1 The figure in brackets represents the number of students from Graduate School, Evening College and other Universities, whereas the figure preceding it represents the number of students from the School of Public Health.

2 Includes 155 in HEED 33

3 Includes 167 in HEED 33



TABLE 8  
 FACULTY CHANGES DURING THE YEAR CLASSIFIED BY DEPARTMENT  
 1982-83

Department	Additions	Promotions	Leaves	Resignations	Retirements	Death	Proposed Additions
Biostatistics	6	2	-	1	-	-	-
Environmental Sciences and Engineering	1	2	1	-	-	-	3
Epidemiology	<del>10</del> 11	16	12	139	11	10	<del>4</del> 6
Health Policy and Administration	6	6	4	9	3	-	-
Health Education	-	2	1	-	1	-	1
Maternal and Child Health	-	-	1	-	-	-	-
Nutrition	2	-	-	-	-	-	-
Parasitology and Laboratory Practice	2	-	-	-	-	-	1
Public Health Nursing	1	-	-	-	-	-	-
Total	28	14	8	11	4	1	9

1 See individual departments for rank and specialization.

*Regular Faculty*  
*All faculty including Adjuncts*

250 200 150 100 50 0

TABLE 9  
PUBLICATIONS OF FACULTY CLASSIFIED BY DEPARTMENT  
1982-83

Department	Faculty <sup>1</sup>		Publications
Biostatistics	25	35	94
Environmental Sciences and Engineering	25	27	127
Epidemiology	127	18	80
Health Policy and Administration	23	24	101
Health Education	5	14	10
Maternal and Child Health	10	10	42
Nutrition	8	10	24
Parasitology and Laboratory Practice	5	9	35
Public Health Nursing	5	6	15
Total	123	153	528

<sup>1</sup> The figure on the left-hand side of the dividing line represents the actual number of faculty who published during the year, whereas the figure on the right-hand side of the line are the listed full-time regular faculty.