

## DEPARTMENT OF EPIDEMIOLOGY

## ANNUAL REPORT

1982-1983

## 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 is made up of directors of programs within the department, or their representatives. The Admissions Committee screens all applications and 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 serve 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 Registrar and the department's Administrative Assistant. 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 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, 1983)

Joyce Allen	Registrar
Edward Bachmann	Dir., Data Management Unit
Carol Beam	Assistant to the Chair.
Sandra Graves	Secretary
Sue Hartnett	Social Research Assistant
Joan Healy	Social Research Assistant
Jo Heiss	Research Associate
Terry Hudgins	Computer Programmer
Phyllis Johnson	Administrative Secretary
Marilyn Knowles	Social Research Assistant
Violet Krall	Fiscal Manager
Marti McLanahan	Data Processing Assistant
Lesa McPherson	Secretary
Veda Manley	Data Processing Coordinator
Sally Muller	Computer Programmer
Beth Ragan	Social Research Assistant
Diane Ramsey	Social Research Assistant
Jinny Reid	Sec'y to the Chairperson
Vic Rhodes	Computer Programmer
Betsy Seagroves	Secretary
Edward Siff	Social Research Assistant
Joanna Smith	Research Assistant
Patricia Taylor	Secretary
Madeline Walker	Secretary
Debbi Windham	Accounting Technician
Susanne Wolf	Research Associate
Sally Zimney	Secretary

Employment Terminations

Jeanne Warner	Soc. Res. Assist.
Ann Sheldon	Clerk Typist

In conjunction with the transfer of the Environmental Protection Agency Service Contract to the Department of Biostatistics, the following staff and SPA positions were transferred to the Department of Biostatistics:

Amelia Burke	Clerk-Typist
Donna Harto	Clerk-Typist
Lynne Newlin	Soc. Res. Assist.
Cass Parrish	Soc. Res. Assist.
Kathlene Seiple	Research Assistant
Darlene Watts	Secretary

## II. INSTRUCTIONAL PROGRAMS

### A. Courses and Curricula

#### 1. Major Changes During the Year:

A separate section of EPID 160 "Principals of Epideimology" was formed for undergraduates and is taught in the Spring semester.

A new course, EPID 270, "Behavioral Issues in Cardiovascular Disease Epidemiology," is now being offered.

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

A recommendation by the Graduate Studies Committee was approved to develop and offer a Student Teaching Effectiveness Component to EPID 257 "Teaching Internship in Epidemiology". The focus is on student faculty development, particularly the capacity to be teaching scholars. The first offering will be in Fall 1983.

An advanced course is being planned to provide a systematic review of issues in the conceptualization, design and data collection and anaysis of clinically oriented epidemiologic research.

#### 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. In addition, Dr. Sherman James participated on the Dean's Ad Hoc Committee on Health Promotion and Disease Prevention. 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 (Drs. Wagner, 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 and Dr. Edward Wagner serves as Associate Director of the Health Services Research Center. Dr. Omran serves as Director of the WHO Collaborative Center for Epidemiologic Studies in Human Reproduction in association with the Carolina Population 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.

## B. Enrollment.

## 1. Number of Graduate Students by:

a. <u>Degree</u>	<u>Fall 1982</u>	<u>Spring 1983</u>
Dr.P.H.	1	1
Ph.D.	31	31
M.P.H.	15	13
M.S.P.H.	10	10
b. <u>Race-Minority Status</u>		
Black Male	4	4
Black Female	3	3
White Male	22	22
White Female	20	21
Foreign Male	3	2
Foreign Female	3	1
Asian Male	1	1
American Indian Female	1	1
c. <u>In-State Residency</u>	28	29
d. <u>Out-of-State Residency</u>	23	24
e. <u>Foreign Students</u>	6	2

## 2. Number of Degrees Awarded:

	<u>Ph.D.</u>	<u>M.P.H.</u>	<u>M.S.P.H.</u>
August 1982	4	0	1
December 1982	3	3	1
May 1982	2	1	1

## 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 above the 80th percentile for those with advanced degrees and above the 65th percentile for those without.

#### 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 meeting with greater difficulty in finding employment in the federal government.

#### 5. Minority Student Enrollment Efforts.

The Admissions Committee of the Department, in concert with interested faculty members and members of the Minority Student Organization, has made efforts to increase the number of completed applications from qualified minority applicants. Most of the activities at the pre-application stage have been directed toward interested undergraduate, graduate and professional students on the Chapel Hill campus. 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. We feel that these personal communications from faculty and students have contributed significantly to the progressive increase in both the number and academic credentials of minority members of our student body. 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, Etc.:

Goldsmith, David: Associate, American College of Epidemiology; Member, Editorial Board, Journal of Toxicology and Environmental Health.

Moore, Valerie M: Elected to the Order of the Golden Fleece; Presented with the the Distinguished Service Award by the UNC Chapter of Delta Omega.

Strogatz, David S.: Elected to Membership in the Delta Omega.

Grants Awarded For Student Projects:

LaCroix, Andrea: Job Characteristics, Perceived Control and CVD. (Effective 7/1/83).

Logue, Everett (Postdoctoral Fellow): Symptom Reports and Mortality in Paper Workers. (Effective 7/1/83)

Wing, Stephen: (with HA.Tyroler): Isolated Systolic Hypertension and Risk of Death in Evans County.

Publications or Presentations by Students:

Daniels SR, Greenberg RS, and Ibrahim MA: Scientific uncertainties in the studies of salicylate use and Reye syndrome. JAMA 249(10):1311-1316, March 1983.

Daniels SR, Greenberg RS, and Ibrahim MA: Etiologic research in pediatric epidemiology. Pediatrics 102(4): 494-504, April 1983.

Schoenbach VS, Garrison C, Kaplan BH: A Review of the Epidemiology of Adolescent Depression. Accepted for publication in Public Health Reviews, 1983.



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.

Cole LP, McCann MF, Higgins JE, and Waszak  
CS: Effects of breastfeeding on IUD  
performance. AJPH 73(4): 384-388, 1983.

Goldsmith DF: Human Cropsray Tests.  
(letter). New Scientists, 97: 677, 1983.

Goldsmith DF, Berry DK, Leininger CC, Shy CM,  
and Johnston DR: Coke Ovens and Community  
Cancer Risk: Methodology and Interpretation  
of Results from Ecological Cancer Studies."  
(abstract), Scandinavian Journal of Work,  
Environment & Health. 9: 63, 1983.

Goldsmith DF, Guidotti TL, and Johnston DR:  
Does Occupational Exposure to Silica Cause  
Lung Cancer? Amer. J. Industrial Med. 3:  
423-440, 1982.

Goldsmith DF: Calculating Cancer Latency  
from Occupational Case-control Studies"  
(abstract), Amer. J. Epid. 115: 582, 1982.

Goldsmith DF: Bias in the Odds Ratio  
Illustrated by a Study of Saccharin Use and  
Bladder Cancer. Environ. Res. 27: 298-306,  
1982.

Goldsmith DF: Coke Ovens and Community  
Cancer Risk: Methodology and Interpretation  
of Results from Ecologic Cancer Studies.  
Presented: Second International Symposium  
Epidemiology in Occupational Health,  
Montreal, Quebec, Canada, August 23-25, 1982.

Heiss G, Schonfeld G, Johnson JL, Heyden S,  
Hames CG, Tyroler HA: Black-White  
Differences in Plasma Levels of  
apo-lipoproteins: The Evans County Study.  
Journal of the American Heart Association,  
Submitted, 1983.

Strogatz DS, Earp JAE: The determinants of dropping out of care among hypertensives receiving a behavioral intervention. Medical Care. 21: 1983.

Wagner, EH, Strogatz DS: Hypertension and labeling: alternative explanations in cross-sectional data. Clinical Research. 30: 919A, 1982.

Wagner EH, James SA, Beresford SAA, Strogatz DS, et al.: The Edgecombe County High Blood Pressure Control Program: I. Correlates of uncontrolled hypertension at baseline. In press, AJPH, 1983.

Tyroler HA, Knowles M, Wing S, et al.: IHD risk factors and 20-year mortality in Evans Co. middle-aged black males. Accepted for Publication in Supplement to the American Heart Journal.

Wing, S.: "Hypertension-Related Mortality in North Carolina and the U.S." Paper presented at the 23rd Annual Conference on CVD Epidemiology of the American Heart Association, San Diego, CA, March 1983.

## C. Teaching Load of Faculty

Fall Semester 1982

Instructor	Course Number	Course Title	Total							Course Hours	
			Enrolled	PHO	HU	EC	AS	GRO	MED		Other
Becker	EPID 211	Determin. of Commun. Dis.	8	6							2
	EPID 394	Doc. Dissertation	1	1		2					0
Checkoway	EPID 160	Principals of Epid. (Sec. 1 w/others)	181	171		4		3		3	3
	EPID 394	Doctoral Dissertation	1	1							9
Fletcher, R.	EPID 140	Problems in Epidemiology	3	3							VAR
	EPID 360	Research in Epidemiology	1	1							3
	EPID 160	Principals of Epid. (Sec. 975)	20						EGW		3
									20		
Haynes	EPID 360	Research in Epidemiology (co-Instruc. w/James)	2	2							VAR
Heiss	EPID 140	Problems in Epidemiology	1	1							1
	EPID 160	Principals of Epid. (Sec. 1 w/others)	181	171		4		3		3	3
	EPID 256	Cardiovascular Dis. Epid.	16	16							3
	EPID 360	Research in Epidemiology	2	2							VAR
Hulka	EPID 394	Doctoral Dissertation	1	1							0
	EPID 160	Principals of Epid. (Sec. 1 w/others)	181	171		4		3		3	3
	EPID 360	Research in Epidemiology	1	1							VAR
	EPID 392	Masters Paper	1	1							VAR
Ibrahim	EPID 394	Doctoral Dissertation	2	2							VAR
	EPID 160	Principals of Epid. (Sec. 1 w/others)	181	171		4		3		3	3
	EPID 168	Fundamentals of Epid. (Principal Instructor)	43	39		2		2		3	3
	EPID 394	Doctoral Dissertation	1	1							0
James	EPID 360	Research in Epidemiology	3	3							VAR
	EPID 392	Masters Paper	1	1							6
	EPID 394	Doctoral Dissertation	2	2							VAR
Kaplan	EPID 360	Research in Epidemiology	4	4							VAR
	EPID 394	Doctoral Dissertation	1	1							0
Kleinbaum	EPID 268	Advanced Methods in Epid	12	12							4



Spring Semester 1983

Instructor	Course Number	Course Title	Total Enrolled	PHO	HU	EC	AS	GRO	MED	Other	Course Hours
Becker	EPID 394	Doctoral Dissertation	1	1							0
Checkoway	EPID 162	Env./Occup. Health	61	38	4	1	0	6	0	12	3
	EPID 257	Teaching Experience in Epid.	1	1							4
	EPID 361	Research in Epidemiology	2	1						1	VAR
	EPID 394	Doctoral Dissertation	1	1							9
Fletcher, R.	EPID 141	Problems in Epidemiology	2	2							VAR
	EPID 361	Research in Epidemiology	1	1							3
	EPID 394	Doctoral Dissertation	1	1							VAR
Greenberg, B.	EPID 141	Problems in Epidemiology	6	5						1	3
	EPID 392	Masters Paper	2	2							VAR
Haynes	EPID 394	Doctoral Dissertation	1	1							7
	EPID 266	Epidemiologic Investigation (Principal Instructor)	8	8							3
Heiss	EPID 361	Research in Epidemiology	2	2							VAR
	EPID 394	Doctoral Dissertation	2	2							VAR
	EPID 233	Cancer Epid./Pathogenesis	23	23			0			0	3
Hulka	EPID 361	Research in Epidemiology	3	3							VAR
	EPID 394	Doctoral Dissertation	2	2							VAR
	EPID 368	Epidemiologic Basis of Community Health Research	20	20							2
Ibrahim	EPID 394	Doctoral Dissertation	1	1							9
	EPID 361	Research in Epidemiology	3	3							VAR
James	EPID 394	Doctoral Dissertation	2	2							VAR
	EPID 264	Culture and Health	21	19			1			1	3
Kaplan	EPID 361	Research in Epidemiology	4	4							VAR
	EPID 394	Doctoral Dissertation	2	2							VAR
	EPID 140	Problems in Epidemiology	8	8							4
Kleinbaum	EPID 160	Principles of Epidemiology (with Shy)	53	3	49		1				3
	EPID 257	Teaching Experience in Epid. (with Shy)	1	1							4
	EPID 257	Teaching Experience in Epid. (with Shy)	1	1							4

			<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>CREDIT HOURS</u>
Nagrunder-Habib	EPID 240	Epid. Alcohol Use/Abuse	5	4	1									3	
Omran	EPID 394	Doctoral Dissertation	2	2										VAR	
Rudnick	EPID 394	Doctoral Dissertation	1	1										0	
Schoenbach	EPID 141	Problems in Epid (HP/DP)	11	10	1									VAR	
Siscovik	EPID 140	Problems In Epidemiology	1	1										6	
Shy	EPID 141	Problems in Epidemiology	1	1										VAR	
	EPID 160	Principles of Epidemiology	53	3	49				1					3	
	EPID 257	Teaching Experience in Epid.	1	1										4	
	EPID 392	Masters Paper	2	2										VAR	
	EPID 394	Doctoral Dissertation	5	5										VAR	
Tyroler	EPID 266	Epidemiologic Investigation (with others)	8	8										3	
	EPID 361	Research in Epidemiology	2	2										VAR	
	EPID 394	Doctoral Dissertation	2	2										VAR	
Wagner	EPID 140	Problems in Epidemiology	1	1										3	
	EPID 361	Research in Epidemiology	1	1										3	
	EPID 394	Doctoral Dissertation	2	2										VAR	
Williams	EPID 258	Women's Health: Epid. Anal.	18	17										3	
											1				

### III. Research Programs

A. Research Programs During the Year [including Training Grants]. (Principal Investigator, and co-investigators shown in parenthesis).

#### 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 postmenopausal 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 progestin-predominant 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 asso-

ciations 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, serologi-



cal studies and interactions of host cells and viral products particles continue to stimulate the most intensive investigative efforts. (Hulka)

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)

Other Cancer Research listed elsewhere:

Drinking Water Quality and Colon Cancer (Environmental), Epidemiologic Study of Cancer Risks in US Atomic Workers (Occupational), Mortality Study of Works in the Florida Phosphate Industry (Occupational), Skin Effects of Chemical Exposure in Rubber Workers (Occupational).

### CARDIOVASCULAR DISEASE EPIDEMIOLOGY

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 trails, 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)

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)

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)

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 results 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, Becker, 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 prevention trial. 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)

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 sub-populations 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)

Other Cardiovascular Disease Research listed elsewhere:

Psychosocial Factors Related to the Risk and Control of High Blood Pressure Among Black Men (Psychosocial), Type A Behavior and Atherosclerosis in Men and Women (Psychosocial). Type A Behavior, Employment Status and Coronary Heart Disease in Women (Psychosocial).

#### ENVIRONMENTAL EPIDEMIOLOGY

Assessment of Pollutant Exposure on Urban Populations: This study was administered through an Intergovernmental Personnel Act Agreement with the Environmental Protection Agency and terminated in January 1983. The research was directed at the overall statistical methodology program of collecting and analyzing data related to pollutant exposure assessment on urban populations. Of major concern was the development and application of design and analysis methods for carbon monoxide data collected with personal exposure monitors by population subgroups while in defined microenvironments. (Love)

CHES Studies. CHES, an acronym for the Community Health and Environmental Surveillance System, is a national program which relates community health to changing environmental quality. The program sought to evaluate existing environmental standards, to obtain health data for new standards, and to document health benefits of air pollution control. This program ended in September of 1982. Health indicators studied include pulmonary function in school children, lower respiratory disease in children, acute respiratory disease incidence in families and chronic respiratory disease prevalence in adults. Analyses have been completed and manuscripts reporting the results have been submitted. (Shy, Love)

Drinking Water Quality and Colon Cancer. We are investigating the relationship of drinking water quality with cancer of the colon in North Carolina using the case-control approach. A matched series of living colon cancer cases and hospital controls is being compared for differences in quality of their drinking water and other environmental factors. A subsidy will determine whether past diet is a confounding factor. Sample size and methodology have been chosen to detect small differences in risk, and water quality indices have been constructed for periods 20 and 30 years in the past to account for the issue of latency. These indices, which are based on source, treatment, and prior use characteristics, provide a basis for establishing a gradient of carcinogenic exposure. With this information, estimates of risk for each exposure level will be obtained and comparisons between these will be made. Using this rigorous approach, it will be possible to provide meaningful data on the importance of water borne carcinogens in the etiology of a leading cancer site. 750 cases and controls have been interviewed and more than 100 public water supply agencies in North Carolina were contacted. This study was completed in 1983; publications are being prepared. (Shy)

Environmental Epidemiology Training. This program's objective is to train doctoral level epidemiologists, motivated and competent to carry out research in environmental problems. The philosophy of the training program is to educate scientists sophisticated in the principles and perspectives of epidemiology and biostatistics, well trained in

environmental sciences and biology, and with knowledge and sensitive awareness of the contribution of the behavioral sciences. The program provides the capability to initiate meaningful epidemiologic inquires. Working in a collaborative mode with the laboratory scientist, the trainee will also be capable of recommending the necessary laboratory experiments which should be conducted to refine or refute hypotheses. Ultimately, the interaction between the laboratory and human population studies is carried out by testing of hypotheses derived from each of the disciplines. (Tyroler, Ibrahim, Shy)

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).

Screening, Recruitment, and Provision of Human Subjects for Physiological and Behavioral Studies. 1982-83 was the last year of a contract with the The Department of Epidemiology and the Clinical Studies Division, Health Effects Research Laboratory of the Environmental Protection Agency to establish and operate a subject recruitment service, to recruit, screen, pretest, schedule, prepare, and reimburse human subjects to participate in physiological and neurobehavioral research conducted by the EPA Laboratory at the campus facility. The Project and associated staff have been transferred to the Department of Biostatistics.

HEALTH SERVICES RESEARCH

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, Wagner)

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)



## OCCUPATIONAL EPIDEMIOLOGY

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 is 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 are expected in the coming year. An evaluation of the three-year program by the University and NIOSH will be done in the concluding months of the third year (Checkoway, 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. Two sub-projects (see above) underway are a mortality study of workers from the Oak Ridge National Laboratory (ORNL) and a case-control study of hematologic malignancies among workers at several nuclear facilities in Oak Ridge, TN. 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).

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).

Respiratory Disease in the Furniture Industry. This pilot study investigates the relationship between occupational exposure to wood dust and the prevalence of chronic respiratory diseases among male furniture workers. The project employs a cross-sectional study design comparing workers exposed to dust with a control group exposed to finishes and another exposed to neither. It is hypothesized that the exposure to hardwood dusts of less than 5  $\mu$  from the sanding operation will be associated with reduced lung function and an increase in respiratory symptoms as measured by a modified MRC questionnaire. Measures of lung impairment will be obtained by analyzing the changes in spirometry readings over a work shift. Baseline pulmonary function among workers exposed to wood dust will be compared to nonexposed workers, adjusting for age, height, race, smoking, prior employment in hazardous jobs, alcohol use, medical history, atopic status, and hobbies. Environmental samples will be collected in order to quantify individual and area exposures to wood dust and to solvents used in finishings. Stratified, multivariate regression analysis will be employed to control for confounding and to look for interaction. (Shy).

Skin Effects of Chemical Exposure in Rubber Workers. Recent evidence indicates that certain groups of rubber manufacturing workers are at risk for squamous cell skin cancer compared to the industry as a whole. It is known that raw materials containing carcinogenic polycyclic aromatic hydrocarbons (PAH's) are used in rubber manufacturing. These include oils, carbon black, waxes, and solvents. A case-control study is underway, drawing on data from two rubber companies to look for an association between squamous cell carcinoma and exposure to PAH's. The cases are 68 male rubber workers who were located from the tumor registries of the Akron, Ohio hospitals. There are two control series drawn from cohorts of rubber workers that have been developed by the OHSU. A first series of four controls are matched on race, sex, and age. A second series of four controls are matched on race, sex, age, and time in the industry. Identification of jobs with PAH exposure is made by means of an industrial hygiene survey and company records. This information will be linked to individual workers by means of their personnel files. Each employee will receive a rating of his PAH exposure. Data analysis will consider both the level of exposure and the number of years of exposure. Additional analysis will look for an association between: 1) skin cancer and length of employment in the industry using the first control series only; and 2) skin cancer and work areas where PAH's cannot be implicated. If such associations are found, attempts will be made to suggest causal exposures. (Hulka).

POPULATION EPIDEMIOLOGY

Population Training Program, WHO Colaborating Center. Supervision of two WHO sponsored physicians who were at the School of Public Health for a 6 month training, taking courses in Epidemiology, Population and Development.

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).

Taiwan: Family Planning and Health. This project will emphasize the impact of family composition on the intelligence of children. (Omran).

Epidemiologic Transition: North Carolina, the U.S. and Several Foreign Countries. Population dynamics and health factors in various communities were described and analyzed in this study. Data collected on infant mortality, life expectancy, fertility, mortality, and causes of death in populations were used to identify communities as either classical, accelerated, or delayed models of epidemiologic transition. The classical model has been found to be representative of the West, the accelerated model is typically observed in Japan and Eastern Europe, and the delayed model encompasses most of the lesser developed countries. (Omran).

PSYCHOSOCIAL 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).

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).

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).

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 RESEARCH PROGRAMS

##### 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).

##### Trial Assessing Chronotherapeutic Insulin Schedules.

This study seeks to improve intraday blood glucose variation. The rationale is based on the previous knowledge that Type I diabetics exhibit a rhythm in blood glucose characterized by a rise in blood glucose level that becomes evident from about 5:00 to 8:00 a.m. and continues after breakfast until about 9:00 to 10:00 am. This period of glucose rise is also characterized by a diminished insulin sensitivity, as demonstrated by studies with the artificial pancreas. If more insulin can be provided during this period of diminished insulin sensitivity, the rise in glucose may be attenuated or even avoided, and consequently, the post-breakfast blood glucose peak may also be decreased. As this postprandial peak has been

consistently reported to be the daily blood glucose maximum, range (maximum minus minimum blood glucose), a measure of intraday diabetic instability, may be expected to be attenuated. The main hypotheses to be tested are: 1) Treatments will attenuate the fasting ascending glucose excursion (FAGE); 2) Treatments will decrease the post-breakfast blood glucose peak; and 3) treatments will minimize range of glycemic excursions. (Schmidt, Heiss, Tyroler).



B. Research and Training Funds Received during the Year.

Abnormal Methionine Metabolism as a Risk Factor in Coronary Artery Disease. American Heart Association; 12-30-83 (Tyroler, Freedman)\*.

Cancer Epidemiology Training. National Cancer Institute; 08-31-84 (Hulka).

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

Cardiovascular Epidemiology and Statistics. National Heart, Lung and Blood Institute; 06-30-84 (Tyroler).

Community Surveillance in the Southeastern United States. National Heart, Lung and Blood Institute; 02-28-84 (Tyroler).

Drinking Water Quality and Colong Cancer. National Institute for Environmental Health Sciences; 01-31-83 (Shy).

Environmental Epidemiology. National Institute for Environmental Health Sciences; 06-30-83 (Tyroler).

Evaluation of Intrauterine Exposures and Gastroschisis Occurrence. University Research Council; 11-10-83. (Ibrahim, Greenberg)\*.

Family Formation and Family Health. World Health Organization; [on-going] (Omran).

Follow-up Study of Hypertensives in a Rural Community. NIH Division of Research Resources; 11-30-81 (Wagner).

Incidence and Severity of Trauma and Burns in North Carolina. NC Dept. of Human Resources; 9-30-83; (Becker).

Isolated Systolic Hypertension and Risk of Death in Evans County, Am. Heart Assoc.- NC Affiliate; 6-30-83; (Tyroler, Wing)\*.

Pilot Evaluation Studies of High Blood Pressure Control. National Heart, Lung and Blood Institute; 05-31-84 (Ibrahim).

Relationship of Plasma Micronutrients to Sputum Cytologic Abnormalities, University Research Council; 3-31-83 (Schoenbach).

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

Social and Community Ties as Predictors of Longevity; National Institute of Aging; 09-28-83 (Schoenbach).

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

Trial Assessing Chronotherapeutic Insulin Schedules. National Institute of Arthritis, Metabolism and Digestive Diseases; 08-31-83 (Schmidt)\*.

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

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C. Notable Publications of Faculty.

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**Cecil G. Sheps**

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Wilson G, Sheps CG, and Oliver TR: Effects of hospital revenue bands on hospital planning and operations. NEJM 307(23):1426, December 2, 1982.

Sheps CG, Wagner EH, Schonfeld WH, et al: An evaluation of subsidized rural primary care programs: I: A typology of practice organizations. A J Pub Health 73(1)pp, January 1983.

Lewis IJ and Sheps CG: The sick citadel: The American Academic Medical Center and the public interest. Cambridge, MA, Oelgeschlager, Gunn, and Hain, Inc., 1983.

**Carl M. Shy**

Winn DM, Blot WJ, Shy CM, Fraumeni JF, Jr: Occupation and oral cancer among women in the South. Am J Indus Med 3:161-167, 1982.

**Herman A. Tyroler**

Tyroler HA, Barrett-Conner E, Criqui MH, Williams OD: Correlates of high blood pressure in the US lipid research clinics populations. NIH Publication #82-2015, September 1982.

Rifkind BM, Heiss G, Tyroler HA, and Williams OD: The epidemiology of high density lipoproteins-the Lipid Research Clinics Program Prevalence Study. Proceedings of the 4th International Meeting on Atherosclerosis, Bologna, Italy, November 23-25, 1981: Clinical Evaluation and Therapy, eds. S. Lenzi and GC Descovich. MTP Press Limited, International Medical Publishers, Boston, Mass. 1982.

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.

Smith EO, Curb JD, Hardy RJ, Hawkins CM and Tyroler HA: Clinic attendance in the hypertension detection and follow-up program. Hypertension 4(5), September-October 1982.

Delzell E, Andjelkovich D, and Tyroler HA: A case-control study of employment experience and lung cancer risk among rubber workers. Am J of Industrial Medicine 3:393-404, 1982.

US-USSR Steering Committee for Problem Area 1 (HA Tyroler, Presenter): The correlates of HDL cholesterol: The US study. USA-USSR First Lipoprotein Symposium, Leningrad, USSR; May 26-27, 1981, DHEW NIH #83-1966, Nov. 1982.

Davis CE, Knowles M, Kark J, Heyden S, Hames CG and Tyroler HA: Serum cholesterol levels and cancer mortality: Evans County twenty-year follow-up study. American Oil Chemist Society, Dec. 6-11, 1981, Chicago, Ill. (in press).

Tyroler HA, Knowles MG, Davis CE, Kark J, Peleg I, Heyden S and Hames CG: Serum cholesterol and cancer mortality in white males: social class effects, Evans County twenty-year follow-up study. 6th International Symposium on Atherosclerosis, June 4-18, 1982, West Berlin (in press).

Hypertension Detection and Follow-Up Program Cooperative Group: Race, education and five-year mortality in HDFP Stratum I referred care males. Third WHO/ISH Conference on Mild Hypertension, September 27-October 2, 1982, Burgenstock, Switzerland (in press).

US-USSR Steering Committee for Cardiovascular Area I: Pathogenesis of Atherosclerosis: USSR and US nutrient intake, plasma lipids, lipoproteins and nutrients in men aged 40-59 sampled from Lipid Research Clinics (LRC) populations. AH 55th Scientific Session, November 18, 1982, Dallas, Texas (in press).

Bush TL, Cowan LD, Barrett-Connor E, Criqui MH, Karon JM, Wallace RB, Rifkind BM, and Tyroler HA: Estrogen use and all-cause mortality preliminary results from the Lipid Research Clinics Program follow-up study. JAMA 249(7), Feb. 18, 1983.

Memorandum from a WHO/ISH meeting: Guidelines for the treatment of mild hypertension. Third WHO/ISH Conference on Mild Hypertension, Sept. 27-29, 1982, Burgenstock, Switzerland. Bulletin of the World Health Organization, 61(1):53-56, 1983.

**Edward H. Wagner**

Fletcher RH, Fletcher SW, Wagner EH: Clinical Epidemiology-the Essentials. Baltimore: Williams & Wilkins, 1982.

Zwick DL, Bobzien WF, Wagner EH: Triage nurse decisions: a prospective study. J Emerg Nursing 8(3):132-138, 1982.

Schoenbach VJ, Kaplan BH, Grimson RC, Wagner EH: Use of a symptom scale to study the prevalence of a depressive syndrome in young adolescents. Amer J Epid 116:791-800, 1982.

Sheps CB, Wagner EH, Schoenfeld WH, DeFries GH, Bachar M, Brooks EF, Gillings DB, Guild PA, Konrad TR, McLaughlin CP, Ricketts TC, Seipp C, Stein JS: An evaluation of subsidized rural primary care programs: I. A typology of practice organizations. Am J Publ Health 73(1):38-49, 1983.

Ricketts TC, Konrad TR, Wagner EH: An evaluation of subsidized rural primary care programs: II. The environmental contexts. Am J Publ Health 73(4):406-413, 1983.

Schoenbach VJ, Kaplan BH, Wagner EH, Grimson RC, Miller FT: Self-reported depressive symptoms in young adolescents. Am J Publ Health (in press).

Broadhead WE, Kaplan BH, James SA, Wagner EH, Schoenbach VJ, Grimson R, Heyden S, Tibblin G, Gehlbach SH: The epidemiologic evidence for a relationship between social support and health. Am J Epid 117(5):521-537, 1983.

Schoenbach, VJ, Wagner EH, Karon JM: The use of epidemiologic data for personal risk assessment in health hazard/health risk appraisal programs. J Chron Dis (in press).

**Timothy C. Wilcosky**

Wilcosky TC, Tyroler HA: Mortality from heart disease in workers exposed to solvents. J Occup Med (Accepted for publication).

Checkoway H, Wilcosky TC, Wolf P, Tyroler HA: An evaluation of the associations of leukemia and rubber industry solvent exposures. Am J Indus Hygiene (Accepted for publication).

Wilcosky TC, Kwiterovich PO, Glueck CJ, et al: Dyslipoproteinemia in Black participants in the LRC population survey. (Under Program Office review).

**Carolyn A. Williams**

Williams CA: "Ethics in Health Policy and Policy Making for Ethics: A Perspective." In Proceedings of the National Invitational Conference Encounter with Ethics: Dilemmas and Directions for Nursing. Chicago, Ill. The John L. and Helen Kellogg National Center for Excellence in Nursing and Rush-Presbyterian-St. Lukes Medical Center, 1982, pp. 163-178.

Williams CA: Books of the Year: Nursing Research. Amer. J. of Nursing, 83: 94-95, 1983.

Williams CA: "Community Health Nursing in Transition: Population Focused Nursing Versus Clinical Nursing in Community Settings." In Community Health Nursing: Processes and Practices for Promoting Health. J Lancaster and M Stanhope, Eds., St. Louis, Missouri: CV Mosby Co., In press.

Williams CA: Community Health Nursing and Policy-Making: A Perspective. Nursing Outlook, In press 1983.

Williams CA, Beresford SA, Strogatz DS, James SA, Wagner EH, and Ibrahim MA: The Edgecombe County High Blood Pressure Control Program: Psychosocial Factors and Hypertension Treatment and Control Status. Abstract, in A Decade of Progress: The Challenge Ahead. National Conference on High Blood Pressure Control, 1983. Published by the National High Blood Pressure Education Program Coordinating Committee, Washington, DC, p. 60.

Wagner EH, James SA, Beresford SAA, Strogatz DS, Grimson RC, Kleinbaum DG, Williams CA, Cutchin LM, and Ibrahim MA: The Edgecombe County High Blood Pressure Control Program: I. Correlates of Uncontrolled Hypertension at Baseline." American Journal of Public Health, In press 1983.

Williams CA: Book Review of Gehlbach, SH. Interpreting the Medical Literature, 1982 in Research in Nursing and Health, in press, 1983.

D. Papers presented by faculty.

**Harvey Checkoway**

Checkoway H, Mathrew RM, Wolf SH, et al: Mortality among workers at the Oak Ridge National Laboratory. Presented at the Health Physics Society Midyear Topical Meeting. Alburquerque, NM, January, 1983.

Wilcosky T, Checkoway H: Computerized synthesis of routinely collected chemical data in an epidemiologic study of leukemia in the rubber industry. Presented at the American Industrial Hygiene Conference, Philadelphia, PA, May 1983.

Checkoway H, Hickey JLS, Kupper LL: Evaluating the influence of clearance rates and changes in exposure intensity over time on dose-effect relationships in occupational epidemiology. Presented at the American Industrial Hygiene Conference, Philadelphia, PA, May 1983.

Rice CR, Harris RL, Checkoway H, et al: Exposure reconstruction and case-control study of silicosis in North Carolina. Presented at the American Industrial Hygiene Conference, Philadelphia, PA, May 1983.

Tankersley WG, Checkoway H: Procedures for assignment of chemical exposure indices for use in epidemiology studies. Presented at the American Industrial Hygiene Conference, Philadelphia, PA, May 1983.

Wilcosky TC, Checkoway H, Marshall EG: Cancer mortality and solvent exposures in the rubber industry. Presented at the Annual Meeting of the Society for Epidemiologic Research, Winnipeg, Canada, June, 1983.



**Bruce Duncan**

Duncan BB: Advantages and use of non-enzymatically glycosylated proteins in clinical and epidemiologic studies. Southern Sugar Club (a regional diabetes association). Kiawah Island, SC, February 25, 1983.

Duncan BB. The association of dyslipoproteinemia with symptoms and signs of peripheral arterial disease. The LRC Prevalence Study. American College of Cardiology, New Orleans, LA, March 23, 1983.

**Suzanne G. Haynes**

Haynes SG: "Women, Work, and Coronary Heart Disease" Fourth Annual Great Lakes Conference on High Blood Pressure Control. Chicago, Ill, October 6-8, 1982

Haynes SG: "Women and Cardiovascular Disease." Southeastern Regional Conference on High Blood Pressure. "Focus on Cardiovascular Disease Risk Reduction." Lexington, KY, October 11-13, 1982.

Haynes SG: "Women, Work and Cardiovascular Disease" American Heart Association, Greater Los Angeles Affiliate, Los Angeles, CA, April 6, 1983.

Haynes SG: "Women, Work and Cardiovascular Disease". Women in Medicine: Third Regional Conference. Rockefeller Univ. New York City, April 8-10, 1983.

Haynes SG: "Women, Work, and Coronary Heart Diseases - Results from the Framingham Heart Study. American Heart Association, North Carolina Affiliate, Board of Directors Meeting, Chapel Hill, NC January 19, 1983.

**Gerardo Heiss**

Wallace RB, Hunninghake D, Chambless LW, Heiss G, Johnson NJ, Wahl P, Barrett-Connor E: A screening survey of dyslipoproteinemias associated with prescription drug use: The Lipid Research Clinics Program. Presented at the 110th Annual Meeting of the American Public Health Association, Montreal, Quebec, November 1982.

Cooper Gr, Heiss G, Green M, Williams OD, Tyroler HA, Rifkind BM: Distribution of HDL cholesterol/total cholesterol ratio values in populations observed by the Lipid Research Clinics. Presented at the Meeting of the American Association for Clinical Chemistry, Anaheim, California, August 11, 1982.

Green M, Heiss G, Rifkind BM, Tyroler HA: Age-related changes in lipoprotein ratios in blacks and whites aged 5-19 years: The Lipid Research Clinics Program Prevalence Study. Presented at the International Symposium on Coronary Arteries in Infants and Children, Tel Aviv, Israel, October, 1982.

Tyroler HA, Wing S, Logue E, Knowles M, Davis CE, Heiss G, Heyden S, Hames CG: Twenty-year total and CHD mortality in the Evans County Study. Presented at the 23rd Annual Conference on Cardiovascular Disease Epidemiology, AHA, San Diego, California, March 1983.

Heiss G, Schonfeld G, Johnson JL, Heyden S, Hames CG, Tyroler HA. Black-white differences in plasma levels of apolipoproteins: The Evans County Study. Presented at the 23rd Annual Conference on Cardiovascular Disease Epidemiology, American Heart Association, San Diego, California, March 1983.

**Barbara S. Hulka**

"Risk/Benefit Ratios of Estrogen Replacement Therapy" at Reproductive Endocrinology Conference, UNC Department of Obstetrics and Gynecology, 9/22/82.

"Clinical Update - The Use and Abuse of Estrogens: The Epidemiologic Prospective," District I Meeting of American College of Obstetricians and Gynecologists, Dixville Notch, New Hampshire, 11/11/82.

"Diet and Breast Cancer" at Malignant Disease Symposium, Department of Nutrition, School of Public Health, Chapel Hill, 10/22-22/82.

"Prevention and Recognition of Toxic Shock Syndrome," Duke University, 1/26/83.

"Toxic Shock Syndrome," Meredith College, Raleigh, 4/21/83.

"Changing Patterns of Cancer Incidence and Mortality" Symposium on Changing Patterns of Disease at American Association for the Advancement of Science meeting, Detroit, Michigan, 5/26-31/83.

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

Ibrahim MA: "A commentary on cardiovascular diseases." American College of Epidemiology Annual Meeting, Chicago, IL, September 30, 1982.

Ibrahim MA: "Public health in the 1980s: service and science." Annual Delta Omega Distinguished Lecture Series, UNC-SPH, November 4, 1982.

Ibrahim MA: "The epidemiologic basis for health promotion." The First International Symposium on Public Health in Asia and the Pacific Basin. Honolulu, HI, March 7, 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.

**David G. Kleinbaum**  
(see Dept. of Biostatistics)

**Abdel R. Omran**

"The Impact of Family Formation Patterns and Family Planning on Health: Assessment of Positive and Negative Effects." Paper presented to the WHO Steering Committee of the Task Force on Service and Psychosocial Research in Family Planning, 13-16, Dec. 1982, Trivandrum, India.

"The Epidemiologic Transition Theory: A Preliminary Update." Paper presented at the International Seminar on Medical Demography Research to Appraise National Family Planning Programs, September 27-29, 1982, Mexico City, Mexico.

"Service and Psychosocial Research in Family Planning: Methodologic Issues and Constraints." Paper presented at the International Symposium on Research of the Regulation of Human Fertility, February 7-9, 1983, Stockholm, Sweden.

**Victor J. Schoenbach**

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

**Carl M. Shy**

Shy CM: Air Pollution and Lung Cancer.  
Presented at International Update on Lung Cancer  
Conference, New Orleans, LA, March 2-4, 1983.

Shy CM: Epidemiologic approaches to the study of  
occupational cancers. Presented at the Seminar  
on Occupational Epidemiology, American  
Occupational Medical Association Annual Meeting,  
Washington, DC, April 25, 1983.

**Herman A. Tyroler**

US-USSR Steering Committee for Problem Area 1  
(HA Tyroler, Presenter). The coorelates of HDL  
cholesterol: The US study. USA-USSR First  
Lipoprotein Symposium, Leningrad, USSR, May  
26-27, 1981, DHEW NIH #83-1966, Nov. 1982.

**Edward H. Wagner**

Wagner EH, Strogatz DS: Hypertension and  
labelling: alternative explanations in  
cross-sectional data. Presented at Society for  
Research and Education in Primary Care Internal  
Medicine, New Orleans, January 1983.

**Timothy C. Wilcosky**

Wilcosky TC, Checkoway H: Computerized  
synthesis of routinely collected chemical data  
in an epidemiologic study of leukemia in the  
rubber industry. Annual meeting of the American  
Industrial Hygiene Association, Philadelphia,  
PA, May 22-27, 1983.

Wilcosky TC, Checkoway Y, Marshall E: Cancer mortality and solvent exposures in the rubber industry. Annual meeting of the Society for Epidemiologic Research, Winnipeg, Manitoba, Canada, June 15-17, 1983.

**Carolyn A. Williams**

Williams CA: "Care Delivery Research Nursing, and the 1980's: A Decisive Decade." Key-note speech, Sigma Theta Tau, Fall Research Symposium, Vanderbilt University, Nashville Tenn. September 30, 1982.

**E. Special Items of Equipment Obtained during the Year.**

2 Digital VT100 Computer Terminals for SPH VAX Access.

**IV. PUBLIC SERVICE**

**List of Activities by Faculty Member:**

**Caroline Becker**

**Departmental Activities:**

Grader, Masters Comprehensive Examination

**School of Public Health Activities:**

Member, Administrative Board of the School of Public Health, September 1982-August 1983.

President, Delta Omega (Public Health honorary society).

**Greater 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**

**Departmental Activities:**

Member, Admissions Committee.  
Interim Chairman, Doctoral Qualifying Examination 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.

**National Activities:**

Served as site visit member for NIH Review of a proposed investigation of AIDS to be conducted in New York City.

**Bruce Duncan**

**School of Public Health Activities:**

Participated as speaker and panalist in Nutrition Department's Continuing Medical Education Course on obesity.

**Lars-Goran Ekelund**

**State Activities:**

Lecture at Duke Univ. on Cardiac Rehabilitation for Physical Therapy.  
Lecture in Wilmington, Postgraduate Course for Physical Therapists: Physical Training after MI.

**Suzanne G. Haynes**

**Departmental Activities:**

Grader, Doctoral Qualifying Examination.

**School of Public Health Activities:**

Search Committee Member, Chairman of the Dept. of Epid.  
Search Committee member HPAA Aging Program Faculty.

**Greater University Activities:**

AAUP Status on Women Committee Member.



**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).  
Reviewer, Behavioral Medicine Abstracts.  
Executive Committee, Society for Epidemiologic Research, Nationally elected, 1983-1986.  
Advisory Committee, Cadiometrical Scientist Training Grant, Medical University of South Carolina, 1983.  
Faculty Member, New England Epidemiology Institute, Summer 1982, 1983.

**Gerardo Heiss**

**Departmental 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**

**Departmental Activities:**

Participant, Epidemiology Conference on Selenium in Health & Disease, Evans Co. Project  
5/19/83.

**National Activities:**

Attended Estrogen Workshop Planning Group Meetings on 12/22/82 and 4/4/83 for NHLBI, NIH.

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

Site Visit at University of Alabama, Birmingham 1/31-2/2/83 for Council on Education for Public Health.

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

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

Member of the Board of Scientific Councilors to the National Cancer Institute, Division of Resources, Centers and Community Activities.

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

Reviewer, Cancer Control and Research Programs of the National Cancer Institute.

Member, Health Services Research, editorial board.

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

**Michel A. Ibrahim**

**School of Public Health Activities:**

Member, Occupational Health Studies Group Policy Board.

**Greater University Activities:**

Member, UNC Health Services Research Center Policy Board.

**State Activities:**

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

Chairman, Medical and Community Program Committee, American Heart Association, North Carolina Affiliate, 1981- .

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

**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:**

Member, U.S.-Egypt Joint Working Group on Health Cooperation, DHEW Development of Health Services Subcommittee.  
Consultant, WHO, Ben Gurion University, Beer Sheva, Israel.  
Member, International Epidemiological Association.

**Sherman A. James**

**Departmental Activities:**

Chairman, Graduate Studies Committee.

**School of Public Health Activities:**

Member, Search Committee for Chair for Epidemiology  
Member, Dean's Ad Hoc Committee on Health Promotion and Disease Prevention.

**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**

**Departmental Activities:**

- Member, Graduate Studies Committee.
- Grader, Doctoral Qualifying Examination.

**Greater University Activities:**

- Chairman, University Committee on Established Lectures, 1983-84..
- Presented a lecture in a course entitled "Introduction to Medicine" sponsored by the Department of Medicine.

**National Activities:**

- Grants Advisor to the William T. Grant Foundation.
- Editorial Board, Journal of Human Stress, Journal of Behavioral Medicine, Family Medicine Review.
- Reviewer, American J. of Epid., and 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.
- Member, Advisory Committee on Health Services Research Program Between the School of Public Health and the Veterans' Administration Health Services Research Program in Durham.

**David G. Kleinbaum**

**Short Courses:**

(see Dept. of Biostatistics)

**Departmental Activities:**

(see Dept. of Biostatistics)

**National Activities:**

(see Dept. of Biostatistics)

**International Activities:**

(see Dept. of Biostatistics)

**Abdel R. Omran**

**Departmental Activities:**

Director, Population Training Program.

**School of Public Health Activities:**

Member, International Health Committee.

Member, Subcommittee of the Graduate Studies Committee.

**Greater University Activities:**

Fellow, Carolina Population Center.

Member, Population Policy Board of the Population Center.

Member, Training Program Committee, Carolina Population Center.

**State Activities:**

Participation with NC State University in supervising doctoral students.

**International Activities:**

Director, HWO Collaborative Center for Epidemiologic Studies in Human Reproduction.

Consultant, World Bank, UNFPA, IFRP, WHO.

Member, Scientific Committee, IFRP.

Member, Scientific Council, International Association for Maternal and Neonatal Health (IAMANEH).

Secretary General, Muslim Scholars Congress on Population, Health and Development.

Professor, WHO-sponsored international course on methodology of serve research, Geneva, Switzerland.

Clinical Epidemiology course given to Physicians, State of Kuwait.

**Victor J. Schoenbach**

**Departmental Activities:**

Member, Graduate Studies Committee.  
Chairman, Master Comprehensive Examination  
Committee.

**Greater University Activities:**

Member, Editorial Board, BASELINE (Quarterly  
publication of UNC Health Services Research  
Center).

**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)..

**Cecil G. Sheps**

**Carl M. Shy**

**Short Courses:**

Occupational Epidemiology. Presented at the New  
England Epidemiology Institute, Amherst,  
Mass., August 1-19, 1983.

**Departmental Activities:**

Member, Admissions Committee.  
Chairman, Seminar Series Committee.  
Grader, Doctoral Qualifying Examination.  
Department Equal Employment Opportunity Officer.

**School of Public Health 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.  
New York University, Epidemiology of Ischemic  
Heart Disease.

**Departmental Activities:**

Member, Admissions Committee.  
Grader, Doctoral Qualifying Examination.

**School of Public Health Activities:**

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

**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.  
Vice-Chairman, American Heart Association,  
Council on Epidemiology.

**International Activities:**

Steering Committee Member, Arteriosclerosis:  
US-USSR, US-Israel, US-Poland, US-Germany.  
Consultant, World Health Organization-  
International Agency on Research of Cancer.

**Edward H. Wagner**

**Short Courses:**

Clinical Epidemiology--Ministry of Health,  
Kuwait.

**Departmental Activities:**

Member, Search Committee for Chairperson  
Member, Health Promotion and Disease Prevention  
Committee.  
Chairman, Admissions Committee.  
Grader, Doctoral Qualifying Examination.

**School of Public Health Activities:**

Chairman, Secretary's Award for Innovations in Health Promotion and Disease Prevention Selection Committee.

**Greater University Activities:**

Member, Curriculum Task Force on the Transition, School of Medicine 1981-.

**National Activities:**

Member, Special Ad Hoc Review Committee: National Center for Child Health and Human Development.

Reviewer, VA Health Services Research and Development Services.

Member, Data Monitoring Committee, National Institutes of Health, Chronic Ambulatory Peritoneal Dialysis Patient Registry.

Consultant, Health Care Plan for Western New York: Health Promotion Activities.

**Carolyn A. Williams**

**Departmental Activities:**

Member, Admissions Committee.

**School of Public Health Activities:**

Traineeship Committee, SPH.

Committee to Review, Chairman of Environmental Sciences & Engineering.

**National Activities:**

President-Elect, Member, Governing Council, American Academy of Nursing (1981-1983).

Member, Advisory Committee of the Medical Practice Research and Development Program, the Robert Wood Johnson Foundation, 1983.

Member, Publications Board, American Public Health Association 1977-1984.

Member, (March 2-4, 1983), Ad Hoc Nursing Research Review Group, Bureau of Health Professions, Health Resources and Service Administration, Dept. of Health and Human Services, Washington, DC.



## 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 & Acting 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  
 Professor  
 Victor J. Schoenbach  
 Research Assistant Professor  
 Cecil G. Sheps  
 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  
 Associate Professor, Epid.,  
 \*Associate Professor, Medicine  
 Carolyn A. Williams  
 \*Associate Professor, Epid.  
 Associate Professor, Nursing

2. Part-Time Faculty

Gory (Bud) J. Love  
Research Associate Professor

3. Visiting Faculty

Bruce B. Duncan  
Visiting Assistant Professor  
Lars-Goran Ekelund  
Visiting Professor  
Timothy C. Wilcosky  
Visiting Assistant Professor

4. Adjunct and Fixed-Term Joint Appointments

Dragana Andjelkovich  
Adjunct Associate Professor, Epid.  
Shirley A. Beresford  
Adjunct Assistant 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. DeFrieze  
Clinical Professor, Epid.  
\*Professor, Social & Admin. Med.  
Robert H. Fletcher  
Clinical Associate Professor, Epid.  
\*Associate Professor, Medicine  
Suzanne W. Fletcher  
Clinical Associate Professor, Epid.  
\*Associate Professor, Medicine  
H. Hugh Fudenberg  
Adjunct Professor  
Stephen H. Gehlbach  
Adjunct Assistant Professor  
Seymour Grufferman  
Adjunct Associate Professor  
Kathrine 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

Clarence C. Lushbaugh  
Adjunct Professor

J. Newton MacCormack  
Adjunct Associate Professor

Eugene S. Mayer  
Adjunct Associate Professor, Epid.  
\*Associate Professor, Fam. Med. & Med.  
Director, AHEC

Melinda S. Meade  
Adjunct Associate Professor, Epid.  
\*Associate Professor, Geography

George R. Parkerson  
Adjunct Assistant Professor

Donald L. Patrick  
Adjunct Associate Professor  
\*Associate Professor, Soc. & Admin. Med.

Ralph C. Patrick  
Associate Professor (Died 1/5/83).

Samuel M. Putnam  
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  
Adjunct Assistant Professor

Robert S. Sandler  
Clinical Instructor, Epid.  
\*Instructor, Med.

David S. Siscovick  
Clinical Assistant Professor, Epid.  
\*Assistant Professor, Med.

Allan H. Smith  
\*Adjunct Associate Professor

Michael R. Swift  
Clinical Professor, Epid.  
\*Professor, Med.

Allen J. Wilcox  
\*Adjunct Assistant Professor

B. Changes During the Year.1. Additions, effective 1982-1983

Shirley A. Beresford Adj. Assist. Prof.  
effective 7/1/82.

Bruce B. Duncan Visit. Assist. Prof.  
effective 7/1/82-6/30/84.

Lars-Goran Ekelund Visiting Professor  
effective 9/15/82-8/31/84.

Seymour Grufferman Adjunct Assoc. Prof.  
effective 10/1/82.

Frank J. Hielema Adjunct Instructor  
effective 11/1/82.

James E. Higgins Adj. Assist. Prof.  
effective 7/1/82.

Donald L. Patrick Adjunct Assoc. Prof.  
effective 8/1/82.

Sheldon M. Retchin Clin. Assist. Prof.  
effective 8/1/82.

Robert S. Sandler Clin. Instructor.  
effective 8/1/82.

Timothy C. Wilcosky Visit. Assist. Prof.  
effective 7/1/82-6/30/84.

Additions Approved, 1983-84.

Richard C. Graves  
Research Associate Professor, Epid.  
\*Research Assoc. Professor, Dentistry  
effective 8/1/83.

Ramon Velez Adj. Assist. Prof.  
effective 7/1/83.

2. Promotions, Effective 1982-1983.

Gordon H. DeFriesse  
Clinical Professor  
effective 7/15/82.

Michel A. Ibrahim DEAN (& Professor)  
effective 9/15/82

David G. Kleinbaum Professor  
effective 7/1/82

Promotions, Approved 1983-1984.

Robert H. Fletcher effective 7/1/83.	Clinical Professor
Suzanne W. Fletcher effective 7/1/83.	Clinical Professor
Stephen H. Gehlbach effective 7/1/83.	Adj. Assoc. Prof.
Suzanne G. Haynes effective 8/1/83.	Res. Assoc. Prof.
Barbara S. Hulka effective 7/1/83.	Prof. & Chairperson
George R. Parkerson effective 9/1/83.	Adjunct Assoc. Prof.
Samuel M. Putnam effective 7/1/83.	Clin. Assoc. Prof.
Robert S. Sandler effective 7/1/83.	Clin. Assist. Prof.
Edward H. Wagner effective 7/1/83.	Professor

3. Leaves:

Gerardo Heiss: Off-Campus Assignment.  
Lipid Research Clinic, Jerusalem.  
3/15/83-6/14/83.

4. Losses: Retirement, Resignation, Death.

Simon-Tov Halfon, Visiting Scientist  
(10/1/81-9/30/82)  
Ralph C. Patrick, Associate Professor  
Died January 5, 1983

C. Proposed Additions:

- 1 Assistant Professor position in Cancer Epidemiology.
- 1 Assistant Professor position in Clinical Epidemiology.

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

**Caroline Becker**

Bronze Service Recognition Medallion,  
American Heart Association, NC affiliate,  
May 1983.

**Suzanne G. Haynes**

Established Investigator of the American -  
Heart Association, July 1982-July 1987.  
Who's Who of American Women, 13th Ed., 1983.  
American Men and Women of Science, 15th  
Edition, 1983.

**Sherman A. James**

Elected to membership in the Academy of  
Behavioral Medicine Research (1983).  
Awarded NIH Research Career Development Award  
(1982-87).

**Abdel R. Omran**

Who's Who in America.  
Who's Who of Intellectuals (England).  
Men and Women of Distinction.  
Who's Who in the South and Southeast.  
American Men and Women of Science.

**Cecil G. Sheps**

Thomas Jefferson Award, University of North  
Carolina at Chapel Hill, 1983.  
Doctor of Philosophy, Honoris Causa, Ben  
Gurion University of the Negev, May 9,  
1983.

**Carolyn A. Williams**

Received Distinguished Alumni Award from  
Texas Woman's University, April 1983.  
Who's Who of American Women, 13th Addition  
(83-84).

E. Special Assignments of Faculty.

**Barbara S. Hulka**

Acting Chairperson, Department of  
Epidemiology 9/15/82-6/30/83.

Chairperson, Department of Epidemiology  
effective 7/1/83.

**Michel A. Ibrahim**

Appointed Dean of the School of Public  
Health, September 15, 1982.

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

This year has been one of transition with the appointments of Dr. Michal Ibrahim as Dean of the School of Public Health, effective September 15, 1983, and Dr. Barbara Hulka as Acting Chairperson of Epidemiology through June 30, 1982, and permanent Chairperson effective July 1, 1983. The Department continues to enjoy its national and international reputation as one of the leading institutions in the field of Epidemiology, but we have found, as anticipated, that because of the cutback of federal funding resulting in the lack of funding for new trainees, we are finding it more difficult to recruit students to our program.