

2000-2001 DEPARTMENT OF EPIDEMIOLOGY
July 1, 2000 – June 30, 2001
Annual Report

DEPARTMENT OVERVIEW

Faculty Changes

During this reporting period, 6 persons joined the Department of Epidemiology's faculty. Drs. **Robert Ryder**, Professor (joint appointment, primary in Epidemiology, secondary in the Department of Medicine); **Robert Sandler**, Professor (joint appointment, primary in Medicine, secondary in Epidemiology); **Mark Daniel**, Assistant Professor (joint appointment, primary in Health Behavior and Health Education, secondary in Epidemiology); **Kelly Evenson**, Research Assistant Professor; **Kathy Rose**, Research Assistant Professor; and **Sharon Weir**, Research Assistant Professor.

The department lost 4 members of the faculty during this reporting period. Drs. **Shermalyn Greene**, Research Assistant Professor; **James Pankow**, Assistant Professor; **Judy Rafson**, Clinical Instructor; **Christine Moe**, Assistant Professor.

Research

Methods for Mediating Factors in Social Epidemiology, PI: **Jay Kaufman**, Assistant Professor, 4/1/01-3/31/04, NICHD/NIH, \$67,500

Disparities in health status by socioeconomic factors are among the oldest and most widely corroborated epidemiologic observations. There has been a recent resurgence of interest in "social epidemiology," and an active research program now seeks to identify the etiologic pathways through which these effects are transmitted. The standard methodologic approach for etiologic inferences concerning a social factor is to decompose effects by contrasting two adjusted effect estimates: one adjusted for potential confounders, and one adjusted for the same potential confounders plus one or more variables hypothesized to lie on the pathway through which the social factor exerts its effect. This contrast is typically used to distinguish indirect effects, through the specified intervening variables, from direct effects, transmitted via unspecified pathways. These mechanistic inferences then inform policy decisions concerning the utility of potential interventions. Although the decomposition approach is now widespread in social epidemiology, its general validity is uncertain, and previous methodologic work suggests that the strategy may have substantial limitations which have never been studied in the social epidemiologic context. This proposed project will investigate the common strategy in social epidemiology of making mechanistic inferences by controlling analytically for hypothetical causal intermediates "as though they were confounders." The assumptions and conditions necessary to support valid etiologic inferences using this approach will be evaluated formally and through simulation exercises, and the sensitivity of conventional statistical models to plausible violations of the necessary assumptions will be quantified using publicly available data. This will help to clarify conditions under which standard effect decomposition may be useful for social factors, and when alternative approaches may be preferred. This will thereby provide a basis for more substantial advancement in social epidemiology, and thus for efficacious policies toward the successful elimination of health disparities in accordance with current national policy directives.

HIV Prevention Trial Unit, PI: **Robert Ryder**, Professor, 7/1/00 - 6/30/05, NIH, \$ 5,833,594.30. UNC researchers have built a laboratory and clinic in St. Petersburg Russia to begin to conduct longitudinal cohort intervention studies aimed at decreasing the spread of HIV. HIV incidence is the endpoint. The activity is funded through a grant from NIAID as part of the HIV Prevention Trials Network. The UNC site in St. Petersburg is one of 26 such sites located around the world. There are ten domestic and 16 international sites.

Gene-Environment Interaction in Head and Neck Cancer, PI: **Andrew Olshan**, Associate Professor, 7/1/01- 6/30/06, NCI/NIH, \$5,682,406

The North Carolina Head and Neck Cancer Study is a population-based case-control study that will include 1,700 persons with head and neck cancer (oral, pharyngeal, laryngeal cancer) and 1,700 control individuals without cancer. The study will focus on the possible interaction between exposures and inherited genetic traits that may influence the risk of cancer. This five-year study will be the largest study of head and neck cancer ever conducted in the United States. The study area will include a 38-county region in central and eastern North Carolina. Participants will be interviewed in their homes and a biologic sample obtained. The identification of important genetic traits associated with cancer risk may help prevention efforts and improve the understanding of the mechanisms of cancer development.

Teaching

EPID 210 The Foundations of Public Health Ethics, Instructor – **James Thomas**, Associate Professor leads this course that concentrates on basic ethical rationales underlying concerns central to public health. These include: ethical reasoning; concepts of justice; the influences of religion; principles of interacting with communities; professional conduct; and research ethics.

EPID 278 Community-driven Epidemiology and Environmental Justice, Instructor – **Steven Wing**, Associate Professor leads this course in principles for conducting research within communities unduly burdened by environmental health threats are presented. Topics include research ethics, community presentations, study design and implementation, and student research projects.

EPID 369 Readings in Methods for Epidemiology, Instructor – **Irva Hertz-Picciotto**, Professor leads this seminar for advanced students exploring methodological issues in epidemiology, including measurement error, missing data, intermediate variables, complex study designs, meta-analysis, splines, and other topics.

Faculty Awards

Marilie Gammon, Associate Professor was nominated to serve as a candidate for president of the Society for Epidemiologic Research by the organization's Steering Committee. She also became an Associate Editor for the American Journal of Epidemiology

Robert Ryder, Profesor, received an Honory Dotoris Honoris Causa Degree from the Silesian Medical Academy in Katowice, Poland.

Irva Hertz-Picciotto, Professor, was co-recipient of the McGavran Teaching Award given by the School of Public Health.

Staff Awards

Nancy Colvin, Assistant to the Chair for Graduate Studies, was awarded the Departmental Staff Excellence Award.

Student Awards

Lesley Butler (PhD student), received the UNC-School of Public Health Class of 2000 Professional Development Grant which allowed her to present during the poster session of the American Society of Preventive Oncology meeting. She also received the American Association for Cancer Research AstraZeneca Scholar-in-Training Award which also allowed her to present at the poster session of the American Association for Cancer Research.

Rebecca Cleveland (PhD student), **Sandra Deming** (PhD student), **Aaron Fleischauer** (PhD student), received individual pre-doctoral fellowship grants from the Department of Defense.

Rebecca James (PhD student), received a US National Security Education Program Graduate Fellowship to spend 6 months in the Czech Republic. She studied the language and worked on her dissertation, a study of air pollution and children's health and development in two districts in that country.

Glenn Grossman (PhD student), and **Richard Kwok** (PhD student), were inducted into the Frank Porter Graham Graduate and Professional Student Honor Society.

Sue Hall (PhD student), was awarded the Lineberger Cancer Center's Cancer Control, Education and Prevention Pre-doctoral Fellowship.

Maria Rangel (PhD student), has received the following honors and awards: Centers for Disease Control and Prevention: Award for Contributions to the CDC Pneumococcal Immunization HEDIS Performance Measurement Team; Centers for Disease Control and Prevention: Award for Contributions to the CDC Measurement Development Team and Pneumococcal and Influenza Immunizations for High-Risk populations under age 65; Department of Health and Human Service Secretary's Award for Distinguished Service: For safeguarding the health of US infants by rapidly assessing and responding to reports of a potentially life-threatening form of bowel obstruction among infants who received a newly licensed vaccine; and CDC & ATSDR Honor Award, Research- Operational, Rotavirus/Intussusception Team, National Immunization Program; Centers for Disease Control and Prevention, National Immunization Program, Group Award for responding to a shortage of influenza vaccine during the 2000-2001 influenza season.

Rachel Williams (PhD student), received the Bryant Scholarship for the Prevention of Violence Against Women.

Alumni Awards

C.V. Ananth, (PhD, 1996, Epidemiology; MPH, 1993, BIOS) currently Assistant Professor of Obstetrics, Gynecology, and Reproductive Science at the Robert Wood Johnson Medical School has received the Young Professional Award from the Coalition for Excellence in Maternal and Child Health Epidemiology. This is a major honor, with national competition for the award.

Sandy Martin, PhD (1988) was co-recipient of the McGavran Teaching Award given by the School of Public Health.

Erin Bell, PhD (2000) and **Anneclaire De Roos**, PhD (2000), received an Intramural Research Award from the Division of Cancer Epidemiology and Genetics to study immunological biomarkers as predictors of non-Hodgkin's lymphoma in the Kaiser Permanente cohort.

FACULTY ACTIVITIES

Publications

1. Alsop JC, Chalmers DJ, Williams SM, Quarrie KL, **Marshall SW**, Sharples KJ. (2000). The New Zealand Rugby Injury and Performance Project. VI. Temporal patterns of injury during a rugby season. J Science Med Sports 3:97-109.
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Faculty Grants Administered Through Other Departments

Lenore Arab

Nutritional Biochemistry and the Epidemiology of Carcinogenesis, NCI, PI, \$115,493
[administered through Lineberger Comprehensive Cancer Center]

Dana Loomis

Homicide During Robbery: A Case-Control Study, NIOSH/CDC, PI, \$265,000
[administered through the Injury Prevention Research Center]

Occupational Injuries Among Commercial Fishers, PI, NIOSH, \$475,000
[administered through the Injury Prevention Research Center]

Wayne Rosamond

Expanding health services to include CVD prevention, CDC, PI, \$150,000
[administered through Center for Health Promotion/Disease Prevention]

North Carolina WISEWOMAN Project, NC DHHS, PI, \$125,000
[administered through Center for Health Promotion/Disease Prevention]

Robert Ryder

HIV Prevention Trial Unit (HPTU), NIH, PI, \$1,400,000
[administered through Infectious Disease Center]

Global Health Threat Programs Involving Collaboration with Scientist from Russia, Yale University, PI, \$42,812
[administered through Infectious Disease Center]

Supplement to the Yale University Center Training Grant, Yale University, PI, \$23,147
[administered through Infectious Disease Center]

Prevention of Mother-to-Child Transmission of Hiv-1 in Kinshasa, Democratic Republic of Congo, Elizabeth Glaser Pediatric AIDS Fdn, PI, \$48,254
[administered through Infectious Disease Center]

David Savitz

Psychosocial Factors in African-American and Preterm Birth, ASPH/CDC, PI, \$59,334
[administered through Carolina Population Center]

Community-Level Social Influences on Preterm Birth, ASPH/CDC, PI, \$68,018 [administered through Carolina Population Center]

Influence of Iron, Zinc and Folate on Preterm Delivery, NICH/HD, PI, \$639,439 [administered through Carolina Population Center]

Occupational Exertion and Preterm Delivery, March of Dimes Birth Defects Foundation, PI, \$47,438 [administered through Carolina Population Center]

Service

Robert Ryder, Professor, is involved with a Study in Four Counties in North Carolina; Wake, Cumberland, New Hanover, Edgecombe in Biopreparedness. In each of these sites UNC SPH. Faculty have worked with the local county health department to identify an emerging disease problem that is important to the county. The projects are as follows: Wake- acute infectious diseases in legal and illegal hispanic workers in the county; Edgecombe- the long-term of adverse effects of hurricane floyd in young school children; New Hanover- the salmonells javiana problem; Cumberland - STDs in civilians and military (Ft. Bragg) populations in the county. The activity is sponsored by CDC.

Irva Hertz-Picciotto, Professor, chaired IOM/NAS committee on Vietnam Veterans and Agent Orange; released report which concluded that there was limited/suggestive evidence of an association between exposures to herbicides used in Vietnam and childhood Acute Myelogenous (non-lymphocytic) Leukemia in the children of the veterans.