DCEG Linkage

Division of Cancer Epidemiology and Genetics

National Cancer Institute

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Number 6

Parting Words from the Chair, Committee of Scientists

Sholom Wacholder, Ph.D.

Editor's note: In this edition of Linkage, Dr. Fraumeni has relinquished the Director's Page to feature Dr. Sholom Wacholder's parting words as he completes his service as Chair of the DCEG Committee of Scientists.

At the February meeting of the Committee of Scientists (COS), which coincided with the end of my term as Chair, Dr. Shelia Zahm, Deputy Director of DCEG, described the influential role that COS has played over the past few years. She noted that DCEG is the only intramural division that has a committee dedicated to addressing the concerns of its scientists, trying to eliminate obstacles to research, and improving communication within the Division. In this way, COS complements and extends the role of the NCI Intramural Advisory Board. COS has been responsible for many important changes in the scientific life of the Division over the past few years. As I leave the committee and reflect on our achievements, I have tried to identify the attributes that have most contributed to its continuing success.

When Dr. Fraumeni first asked me to chair the new committee, it was easy to come up with a list of things I wanted to change. Since there was no precedent for what could or could not be accomplished, I worried whether we would be either too complacent or too ambitious and unrealistic.

In This Issue: **Page**

Jeffery Struewing, M.D.

DR. STRUEWING RECEIVES PRESIDENTIAL EARLY CAREER AWARD

Dr. Jeffery Struewing, a tenure-track investigator in DCEG's Laboratory of Population Genetics, received the Presidential Early Career Award for scientific achievement. The award was given for his significant contributions to the understanding of breast cancer susceptibility genes. The Presidential Early Career Award recognizes outstanding scientists and engineers at the outset of their independent research careers. Dr. Struewing, who received the award on February 10 at the Old Executive Office Building, was the only scientist from the NIH intramural program to be honored this year with this prestigious award.

As I look back, I find that it is easy to see why COS has been so successful. First, several long-term members of the Division provided strong leadership. These senior staff members were aware of the institutional obstacles to research and career progression, and knew where previous efforts to change them had been stymied. They could distinguish between the growing pains of a new and rapidly changing Division and the inherent difficulties in leading the operation of a research institution, particularly one that is part of the Federal government. Second, COS included assertive newcomers to DCEG who brought ideas from their experiences at other institutions. Most important, they challenged us not to accept certain problems as natural or inevitable. Third, we had the support of the Division leadership. Dr. Fraumeni listened to the issues we raised and, within his authority, acted on our suggestions. Fourth, we received support and suggestions from other DCEG scientists who were not members of the committee. Finally, the dynamics of the committee seemed perfectly suited for our task. Members worked together with great respect and collegiality. Everyone was willing to listen, to learn, and to consider the big picture of DCEG, rather than to focus on the parochial interests of a single branch or individual. Members knew that we needed to identify specific problems and to develop concrete suggestions for addressing them. We accepted the challenge of our task, and we worked hard at it. We did this by consensus, even when doing so in the short run was inefficient, and we shared both the responsibility and the credit. Finally, with no precedent to uphold, we could look at every issue in a fresh and innovative way.

The attributes that made COS a productive administrative committee are the same ones that increase the likelihood of success for any collaborative research team: a mixture of experienced scientists, who know what has been tried before, and young scientists, who bring new skills and fresh approaches to a difficult problem; the willingness to learn from one another, share the credit, or even take a back seat occasionally, for the good of the project or the science; the willingness to consider constructive suggestions from the outside; and most of all, hard work.

As the tools of science change with rapid advances in technology, it is easy to forget that the human element remains paramount. Service on COS was a forceful and satisfying reminder to me that dedicated people can make all the difference. ■

Sholom Wacholder

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INTRAMURAL RESEARCH AWARD WINNERS

Congratulations to Dr. Mary Ward and Dr. Bu-Tian Ji, whose applications for an Intramural Research Award (IRA) were approved after review by the epidemiology contingent of the Board of Scientific Counselors. The IRA provides special funding for innovative and interdisciplinary collaborative research that is programmatically relevant to DCEG's mission and crosses the usual organizational boundaries. Both principal investigators and fellows are eligible to receive these awards.

Dr. Ward's project will evaluate the usefulness of new technologies to measure exposures to environmental pesticides. This research area is particularly relevant to the Division's various studies in which exposures to residential and agricultural pesticides are being evaluated as potential risk factors for cancer. Dr. Ward's IRA application was entitled, "Residential exposure to crop pesticides: A comparison of carpet dust measurements and exposure estimates using remote sensing data and a geographic information system."

Dr. Ji received his award to examine associations between organochlorine compounds in serum and *CYP1A1* polymorphisms and their effects on risk of breast cancer. The project will also provide data for future genetic analyses exploring other loci that may modify breast cancer risk. Dr. Ji's IRA application was entitled, "Organochlorine compounds, cytochrome *p4501A1* polymorphisms and breast cancer in a population with a high level of exposure to pesticides." ■

CHORNOBYL RESEARCH UNIT JOINS DCEG

In December, the research and management activities related to NCI's studies of cancer risks associated with fallout from the accident at the Chornobyl nuclear facility were reassigned from the Division of Cancer Biology to DCEG's Radiation Epidemiology Branch (REB). A new Chornobyl Research Unit (CRU) was established within the Branch, with Dr. Gilbert Beebe as its Head. The CRU also includes Dr. Ihor Masnyk, who serves as the Project Director; Dr. Andre Bouville, a specialist in radiation dose reconstruction; and Dr. Nick Luckyanov, a mathematician. Ms. Kathy Stine has also joined REB as a Program Analyst to assist the CRU. The CRU is responsible for studies in Belarus and Ukraine of thyroid disease among persons exposed as children to ionizing radiation from the accident, and for a pilot study of leukemia and other hematologic disorders among the facility's cleanup workers in Ukraine. ■

COMMITTEE OF SCIENTISTS

Dr. Thomas O'Brien, Viral Epidemiology Branch, has been appointed Chairperson of the Committee of Scientists (COS). He replaces Dr. Sholom Wacholder, who held this position since the Committee's inception in 1995. DCEG scientists who have recently completed their terms as COS members are Dr. Michael Alavanja, Ms. Rochelle Curtis, and Dr. Dilys Parry. Current COS members and their periods of service are:

Thomas O'Brien	5/98–2/00,	Chair 3/99–2/00
Dalsu Baris	5/98–4/99	
Kenneth Cantor	12/98–11/99	
Lynn Goldin	12/98–11/99	
Gloria Gridley	12/98–11/99	
Allen Hildesheim	5/98–4/99	
Sandra Petralia	5/98–4/99	
Lois Travis	12/98–11/99	
Stephanie Weinstein	12/98–11/99	

A description of the COS mission may be accessed at *http://intranet-dceg.ims.nci.nih.gov/scientists.html.* ■

BREAST CANCER WORKSHOP

A workshop entitled Early Life Exposures and Risk of Breast Cancer was held in January in Chantilly, Virginia. The workshop was organized and chaired by Dr. Nancy Potischman, formerly a member of the Nutritional Epidemiology Branch, with the assistance of two cochairs, Dr. Dimitrios Trichopoulos from the Harvard School of Public Health and Ms. Cindy Pearson, a representative of the National Action Plan for Breast Cancer (NAPBC). Dr. Louise Brinton and Dr. Robert Hoover served as members of the planning committee. The workshop was sponsored by NAPBC's Etiology Working Group and the PHS Office of Women's Health.

The research field of *in utero* and perinatal risk factors for breast cancer is relatively new, with most studies having been published in the last 3 years. The workshop brought together epidemiologists working in this area of breast cancer research and other investigators, including experts on early life risk factors for cardiovascular disease, maternal and child health, pathology, endocrinology, animal carcinogenesis, and biostatistics. The workshop's objectives included:

- Evaluate the current evidence related to early life exposures and risk of breast cancer;
- Learn more about the biologic mechanisms of early life growth and of perinatal and multigenerational carcinogenesis;
- Discuss and evaluate relevant epidemiologic studies; and
- Identify key issues requiring attention and make recommendations to address them.

About 50 researchers from the United States, Europe, and Australia attended the workshop. In addition, several breast cancer advocates participated and provided many useful insights. A publication will be prepared describing the key issues identified at the workshop and the recommendations for future research. ■

Stephanie Weinstein

NCI INTRAMURAL ADVISORY BOARD

Dr. Susan Devesa and Dr. Michael Alavanja have been appointed as DCEG representatives to the NCI Intramural Advisory Board (IAB). They join Dr. Robert Tarone, who remains an IAB member through 1999. Outgoing DCEG members are Dr. Margaret Tucker, who chaired the IAB for 2 years, and Dr. Patricia Hartge. The IAB provides a communications channel through which the concerns and needs of intramural scientists can be conveyed to the Institute's leadership. The IAB maintains a web site at *http://camp.nci.nih.gov/admin/boards/iab/index.html.* The IAB chairperson also serves as a member of the NCI Executive Committee.

DCEG CANCER GENETICS COURSE

Dr. Dilys Parry and Dr. Alisa Goldstein, Genetic Epidemiology Branch, have again organized a series of outstanding lectures on topics in cancer genetics. The series is divided into three modules: Introduction to Genetics, Cancer Genetics, and Interdisciplinary Studies. Lecturers are distinguished intramural researchers from DCEG, Division of Clinical Sciences, Division of Basic Sciences, and the Frederick Cancer Research and Development Center. Although a number of lectures have been completed, the remaining ones will continue on Tuesday afternoons through the end of May. Further information about the lectures, including their location and time, can be accessed at *http://intranet-dceg.ims.nci.nih.gov/GeneticsCourseSpring1999.html.*

STUDY DESIGNS TO DETECT GENE-ENVIRONMENT INTERACTIONS

Advances in molecular genetic techniques have increased our ability to examine gene-environment interactions in cancer etiology. Studies to detect these interactions are undertaken for a number of reasons. For example, we may wish to detect cancer genes with lifetime risks of less than 100 percent (i.e., incomplete penetrance). Incomplete penetrance may result from other factors in disease etiology, such as environmental exposures that may or may not interact with genetic modifiers. Hereditary factors that control the metabolism of carcinogens may also modulate risk of disease (as hypothesized in the concept of pharmacogenetics). In addition, inconsistent associations between cancer and a suspected risk factor may exist across studies. One reason for these inconsistencies may be that relevant risk factors are difficult to detect because of heterogenous study populations, with genetic mechanisms predisposing individuals to differential effects of environmental exposures. These and others situations have led DCEG to increase emphasis on interactions between genetic and environmental factors and between genes themselves in the origins of cancer.

A gene-environment interaction may exist if the joint effect of the genetic factor and the environmental exposure differs from the product of the risks for the individual factors on a multiplicative scale, and if it differs from the sum of the background disease rate, the excess rate for the environmental exposure, and the excess rate for the genetic factor on an additive scale. In general, most methods currently available for examining these interactions allow for estimating risk associated with a genetic factor, an environmental factor, and an interaction effect. Case-only studies and transmission-disequilibrium-test-like approaches allow for assessing interaction effects only. Since case-only studies can efficiently estimate gene-environment interactions, though, this approach could be used if resources are sufficient to genotype only cases, the interest is in studying the effect of gene-environment interactions on tumor characteristics, or only tumor specimens are available. If the exposure risk is not already well characterized, however, which may be the case when the genetic factor involved in the interaction is common, the usefulness of case-only study designs may be questionable. In this situation, the incomplete-data-case-control design might be a viable alternative.

Assessing gene-environment interaction effects without estimating and understanding the main effects of the genetic and environmental factors would be of little use for public health or individual risk assessment. Nevertheless, such assessments could increase our knowledge about biological mechanisms underlying gene-environment interactions. The critical assumption for these studies is the independence of the genetic and environmental factors. Evaluation of this assumption requires linked genetic and environmental factor data in at least some controls. When the genetic factor is unknown, case-control study designs using related and unrelated controls permit estimation of risks associated with environmental exposures only, but may suggest how genes and the environment interact.

Efficiency and power for assessing gene-environment interactions have been rarely studied for the various methods mentioned. Further investigation is needed to define the efficiency spectrum of each method in interaction assessment. Most available methods seem too inefficient to detect interactions of a rare factor. Multistage balanced or counter-matched studies could be used if the rare event is easily and inexpensively measured. At present, using this approach to study rare genetic factors is likely too costly.

To date, no single method appears universally applicable for assessing gene-environment interactions. The most appropriate approaches will depend on the disease, environmental exposures, genetic factors and the interaction effect, the risk estimates and frequencies of the various factors, and how much data is available on each of these components. Further assessment of existing methods and development of new methodologic approaches are needed to improve our ability to detect gene-environment interactions in complex diseases. (Andrieu N, Goldstein AM. Epidemiologic and genetic approaches in the study of gene-environment interaction: An overview of available methods. *Epidemiol Rev* 1998;20:137-147) ■

Alisa Goldstein

SCIENTIFIC HIGHLIGHTS

Biostatistics Branch

Diet and Risk of Esophageal Cancer in White Men and Black Men

Food frequency questionnaires from a population-based case-control study of white men and black men were analyzed for dietary factors related to risk of squamous cell esophageal cancer. Cases consisted of 114 whites and 219 blacks, and controls consisted of 681 whites and 557 blacks. Protective effects were associated with increasing categories of raw fruit and vegetable consumption and with vitamin supplements (especially vitamin C) in both racial groups, with consumption being greater among white than black control subjects. Elevated risks were associated with high intake of red meat (particularly for black men) and processed meat, with levels of consumption being greater among black than white control subjects. These differences in dietary patterns may contribute to the fivefold higher incidence of squamous cell esophageal cancer among black men than white men in the United States. (Brown LM, Swanson CA, Gridley G, Swanson GM, Silverman DT, Greenberg RS, Hayes RB, Scohenberg JB, Pottern LM, Schwartz AG, Liff JM, Hoover R, Fraumeni JF Jr. Dietary factors and the risk of squamous cell esophageal cancer among black and white men in the United States. *Cancer Causes Control* 1998;9:467-474)

Gastric Cancer in Two Counties of China

Linqu County in Shandong Province of northeast China has a gastric cancer rate 15 times higher than Cangshan County in Shandong Province, even though these counties are within 200 miles of each other. With use of endoscopy to evaluate the rate of precancerous gastric lesions, the prevalence of intestinal metaplasia and dysplasia was found to be 30 percent and 15 percent, respectively, among 3,400 adults in Linqu compared to 8 percent and 6 percent among 224 adults in Cangshan. Within these histologic categories, advanced grades were found more often in Linqu than in Cangshan, supporting the role of intestinal metaplasia and dysplasia in the multistep process of gastric carcinogenesis. (You WC, Zhang L, Gail MH, Li JY, Chang YS, Blot WJ, Zhao GL, Liu WD, Li HQ, Ma JL, Hu YR, Bravo JC, Correa P, Xu GW, Fraumeni JF Jr. Precancerous lesions in two counties of China with contrasting gastric cancer risk. *Int J Epidemiol* 1998;27:945-948) In Cangshan County, the prevalence of *Helicobacter pylori* infection was lowest among those with normal gastric mucosa, rising steadily to 35 percent for superficial gastritis, 56 percent for chronic atrophic gastritis, 80 percent for intestinal metaplasia, and 100 percent for dysplasia. In a comparison of *H. pylori*-positive precancerous lesions with normal histology, the odds ratio (OR) was elevated for chronic atrophic gastritis (OR=4.2) and intestinal metaplasia-dysplasia (OR=31.5). After adjustment for *H. pylori* infection, alcohol consumption was a risk factor for chronic atrophic gastritis (OR=3.2) and intestinal metaplasia-dysplasia (OR=7.8). Garlic consumption showed nonsignificant protective effects and was inversely associated with *H. pylori* infection. These findings provide further evidence for the etiologic role of *H. pylori* infection in gastric carcinogenesis and the protective role of garlic consumption. (You WC, Zhang L, Gail MH, Ma JL, Chang YS, Blot WJ, Li JY, Zhao CL, Liu WD, Li HQ, Hu YR, Bravo JC, Correa P, Xu GW, Fraumeni JF Jr. *Helicobacter pylori* infection, garlic intake and precancerous lesions in a Chinese population at low risk of gastric cancer. *Int J Epidemiol* 1998;27:941-944) ■

Environmental Epidemiology Branch

Estrogen Replacement Therapy and Breast Cancer Survival

Survival of women with postmenopausal breast cancer was examined in a screening study of 2,614 patients according to estrogen hormone replacement therapy (HRT) status at time of diagnosis. Patients were followed an average of 14.1 years after diagnosis. Among patients with node-negative disease, the hazard-rate ratios for breast cancer mortality associated with current HRT use compared with nonuse were 0.5 until 12 years after diagnosis and 2.2 thereafter. Mortality was not statistically lower in past HRT users. The cumulative probabilities of breast cancer mortality at the end of follow-up were 0.14 (nonusers), 0.14 (past users), and 0.09 (current users). Among women with node-positive disease, the hazard-rate ratios associated with current and past use were both 0.5 until 4 years after diagnosis and thereafter 1.1 and 1.8, respectively. The cumulative probabilities of breast cancer mortality were 0.32 (nonusers), 0.39 (past users), and 0.27 (current users). Thus, patients who were HRT users at the time of diagnosis experienced reduced breast cancer mortality, which waned with

time from diagnosis. (Schairer C, Gail M, Byrne C, Rosenberg PS, Sturgeon SR, Brinton LA, Hoover RN. Estrogen replacement therapy and breast cancer survival in a large screening study. *J Natl Cancer Inst* 1999;91:264-270)

Smoking and Breast Cancer Risk among Younger Women

Data from a population-based case-control study were used to evaluate the relation between cigarette smoking and risk of breast cancer among young women. A modest inverse relation with current (OR=0.82) but not past smoking was found among women under age 45 years. Risk decreased for current smokers who began smoking at an early age (OR=0.59) or continued smoking for long periods (OR=0.70 for more than 21 years). In subgroup analyses, reduced risk was observed for current smokers who had used oral contraceptives, were in the lowest quartile of adult body mass, or never or infrequently drank alcohol. Among women aged 45 to 54 years, there was little evidence for any association with smoking. These results suggest a modest reduction in breast cancer risk among women under age 45 who are current smokers, particularly among those who are long-term smokers and those who began smoking at an early age. The reduction in risk may be related to anti-estrogenic properties associated with cigarette smoking. (Gammon MD, Schoenberg JB, Teitelbaum SL, Brinton LA, Potischman N, Swanson CA, Brogan DJ, Coates RJ, Malone KE, Stanford JL. Cigarette smoking and breast cancer risk among young women. *Cancer Causes Control* 1998;9:583-590)

Alcohol Consumption and Risk of Breast Cancer

The role of light alcohol consumption and alcoholic beverage type on breast cancer risk was examined using data from the Framingham Study. Among the 2,764 women in the original cohort followed for more than 40 years (from 1948 to 1993) and the 2,284 women in the offspring cohort followed for up to 24 years (from 1971 to 1993), there were 221 and 66 cases of incident breast cancer, respectively. Breast cancer risk decreased from 3.60 per 1,000 person-years to 2.47, 2.30, and 2.33 in increasing categories of average alcohol consumption in the original cohort, and from 3.07 to 1.26, 1.24, and 2.22 in the offspring cohort. When the two cohorts were combined, risk in successively increasing categories of alcohol consumption was 1.0 (nondrinkers), 0.8, 0.7, and 0.7. Changes in risk were not associated with wine, beer, or spirits consumption when each beverage was analyzed individually. The findings suggest that light consumption of alcohol or of any type of alcoholic beverage is not associated with an increased risk of breast cancer. (Zhang YQ, Kreger BE, Dorgan JF, Splansky GL, Cupples LA, Ellison RC. Alcohol consumption and risk of breast cancer: The Framingham Study revisited. *Am J Epidemiol* 1999;149:93-101)

Diet and Risk of Prostate Cancer in China

A case-control study was conducted to evaluate the role of dietary factors in the etiology of prostate cancer in a low-risk population in China. Interview data were analyzed from 133 histopathologically confirmed cases of prostate cancer diagnosed between 1989 and 1992 and 265 neighborhood controls. Cases were more likely than controls to consume food with high fat and from animal sources ($p < 0.01$). Daily fat intake and the percentage of energy from fat were higher among cases than among controls ($p < 0.01$). When the lowest and highest quartiles of intake were compared, the adjusted odds ratio was 3.6 for total fat, 2.9 for saturated fat, and 3.3 for unsaturated fat. These findings suggest that dietary fat — both saturated and unsaturated — is associated with an increased risk of prostate cancer in a low-risk population. (Lee MM, Wang R-T, Hsing AW, Gu F-L, Wang T, Spitz M. Case-control study of diet and prostate cancer in China. *Cancer Causes Control* 1998;9:545-552)

Genetic Epidemiology Branch

Breast Cancer Survival in Ashkenazi Jewish BRCA1 and BRCA2 Mutation Carriers

An analysis of a community-based study of Jewish volunteers of Ashkenazi origin was carried out to investigate the effect of three founder mutations in the *BRCA1* and *BRCA2* genes on survival among patients with breast or ovarian cancer. Blood samples from 5,318 participants were tested for the *185delAG* and *5382insC* mutations in *BRCA1* and the *6174delT* mutation in *BRCA2*. A novel extension of the kin-cohort method (Wacholder S, Hartge P, Struewing JP, Pee D, McAdams M, Brody L, Tucker M. The kin-cohort study for estimating penetrance. *Am J Epidemiol* 1998;148:623-630) was

used to estimate survival differences in the affected relatives according to mutation carrier status. Fifty mutation carriers reported 58 first-degree relatives with breast cancer and 10 with ovarian cancer, and 907 noncarriers reported 979 first-degree relatives with breast cancer and 116 with ovarian cancer. No statistically significant difference was found between median survival after breast cancer for relatives of carriers (16 years) and noncarriers (18 years). There was also no difference in survival time between first-degree relatives with ovarian cancer. In addition, no survival difference was found between patients with breast or ovarian cancer who were inferred carriers of *BRCA1* or *BRCA2* mutations versus noncarriers. These findings suggest that carriers of *BRCA1* and *BRCA2* mutations have approximately the same survival prognosis as noncarriers. (Lee JS, Wacholder S, Struewing JP, McAdams M, Pee D, Brody LC, Tucker MA, Hartge P. Survival after breast cancer in Ashkenazi Jewish *BRCA1* and *BRCA2* mutation carriers. *J Natl Cancer Inst* 1999;91:259-263)

Comparison of Merkel Cell (Skin) Carcinoma and Melanoma

Using data from the Surveillance, Epidemiology, and End Results (SEER) program, Merkel cell carcinoma (MCC) of the skin was compared with cutaneous malignant melanoma. From 1986 to 1994, 425 of cases of MCC were reported; the annual age-adjusted incidence per 100,000 was 0.23 for whites and 0.01 for blacks. Among whites, the ratio of melanoma to MCC was about 65 to 1. Only 5 percent of MCC occurred before age 50, unlike the lifelong risk of nodular and superficial spreading melanoma. The geographic incidence of MCC and melanoma increased similarly with increasing exposure to sun. Both MCC and melanoma increased in frequency and aggressiveness after immunosuppression, organ transplantation, or B-cell neoplasia. Six patients with both MCC and melanoma were identified in the SEER data, and in five of these cases, melanoma occurred first. Overall, MCC and melanoma are etiologically linked to ultraviolet exposure and immunosuppression, but differ markedly in their distributions by age, race, and anatomic site, especially the face. (Miller RW, Rabkin CS. Merkel cell carcinoma and melanoma: Etiological similarities and differences. *Cancer Epidemiol Biomark Prev* 1999;8:153-158)

Screening for Wilms' Tumor in Children

A case series analysis was undertaken to assess the value of sonography screening in preventing late-stage (III or IV) Wilms' tumor in children with Beckwith-Wiedemann syndrome and idiopathic hemihypertrophy (BWS/HH). Fifteen screened patients, who had sonograms at intervals of 4 months or less, were compared with 59 unscreened patients. None of the 12 screened children who developed Wilms' tumor had late-stage disease, whereas 25 (42%) of the unscreened children had late-stage disease. Three of the screened children were operated on for suspected Wilms' tumor, but the lesions proved to be renal cysts or nephroblastomatosis. These results suggest that children with BWS/HH may benefit from screening sonograms at intervals of 4 months or less, although false-positive findings may result in unnecessary surgery. (Choyke PL, Siegel MJ, Craft AW, Green DM, DeBaun MR. Screening for Wilms tumor with Beckwith-Wiedemann syndrome or idiopathic hemihypertrophy. *Med Pediatr Oncol* 1999;32: 196-200)

p53 Mutation Status and Genetic Polymorphisms in Non-small Cell Lung Cancer

Mutation status of *p53* was analyzed in relation to DNA polymorphisms of *GSTM1*, *CYP1A1*, and *CYP2E1* from 105 cases of surgically resected non-small cell lung cancer. The analysis was adjusted for demographic factors, smoking, occupation, family history, and tumor histology, grade, and stage. The *p53* mutations were overrepresented among *CYP1A1* variants. Mutations in exon 8 and transitions at CpG sites in the *p53* gene were favored in this subset. No relation was found between individual gene polymorphisms or *p53* mutations and disease-free survival. The finding of excess *CYP1A1* heterozygotes among persons with *p53* mutations after adjustment for smoking suggests that *CYP1A1* activation contributes to lung cancer through *p53* inactivation. (Przygodzki RM, Bennett WP, Guinee DG Jr, Khan MA, Freedman A, Shields PG, Travis WD, Jett JR, Tazelaar H, Pairolero P, Trastek V, Liotta LA, Harris CC, Caporaso NE. *p53* mutation spectrum in relation to *GSTM1*, *CYP1A1* and *CYP2E1* in surgically treated patients with non-small cell lung cancer. *Pharmacogenetics* 1998;8:503-511)

RAISING RESPONSE RATES: GETTING TO YES

"Each year proportionately fewer ordinary people in the United States will give us their time, their records, or their blood," according to Dr. Trisha Hartge in an editorial that appeared in the March issue of *Epidemiology*. The editorial accompanies a report by Stang and colleagues on response rates for case-control studies in Germany, where no decline was seen over a 9-year period. Dr. Hartge argues that the challenge of getting adequate response rates has become increasingly important as epidemiology expands its focus to include genetic and molecular components in most studies. She urges that more research be conducted to determine the underlying reasons for the decline in participation so that these trends might be reversed.

Nutritional Epidemiology Branch

Is Colonoscopy Needed for Nonadvanced Adenoma?

The Polyp Prevention Trial, a multicenter dietary intervention study, evaluated the need for colonoscopy in patients with a single nonadvanced tubular adenoma identified in a screening program using sigmoidoscopy. Of the 981 patients with distal adenomas, 46.9 percent had one or more that was pathologically advanced and 21.5 percent had proximal adenomas, 4.3 percent of which were advanced. Approximately 5.9 percent of patients with advanced distal adenomas, but only 2.9 percent with nonadvanced distal adenomas, also had advanced proximal adenomas (odds ratio=2.1). Without colonoscopy in patients with nonadvanced distal adenomas, 36 percent of advanced proximal adenomas would have been missed. These findings suggest that colonoscopy may be an important follow-up procedure to detect advanced proximal adenomas among patients found to have nonadvanced distal adenomas by sigmoidoscopy. (Schoen RE, Corle D, Cranston L, Weissfeld JL, Lance P, Burt R, Iber F, Shike M, Kikendall JW, Hasson M, Lewin KJ, Appelman HD, Pakett E, Selby J, Lanza E, Schatzkin A. Is colonoscopy needed for the non-advanced adenoma found on sigmoidoscopy? *Gastroenterology* 1998;115:533-541)

Meat Consumption and Risk of Lung Cancer in Women

A population-based case-control study among smoking and nonsmoking women was conducted in Missouri to investigate the role of meat intake and cooking practices in relation to risk of lung cancer. Food frequency questionnaires were analyzed from 593 cases and 623 matched controls. When the 90th and 10th percentiles were compared, risk of lung cancer increased for total meat consumption (OR=1.6), red meat (OR=1.8), well-done red meat (OR=1.5), and fried red meat (OR=1.5). The ORs comparing the 5th and 1st quintiles using categorical variables for well-done red meat and fried red meat were essentially the same as with percentiles, although the increase in risk was associated mainly with the 5th quintile. These results suggest an increased risk of lung cancer related to high consumption of all meat and red meat, as well as to cooking practices associated with the production of compounds that are carcinogenic in laboratory animals. (Sinha R, Kulldorff M, Curtin J, Brown CC, Alavanja M, Swanson CA. Fried, well-done red meat and risk of lung cancer in women (United States). *Cancer Causes Control* 1998;9:621-630)

Occupational Epidemiology Branch

Cytogenetic Changes in Lymphocytes of Chinese Workers Exposed to Benzene

Two common cytogenetic changes in therapy- and chemical-related leukemia are loss and long-arm deletion of chromosomes 5 and 7. The detection of these aberrations in lymphocytes of persons exposed to potential leukemogens may serve as biomarkers of increased risk of leukemia. A novel fluorescence *in situ* hybridization (FISH) procedure was used to determine if specific aberrations in chromosomes 1, 5, and 7 occurred at elevated rates in lymphocytes of workers exposed to benzene, a known leukemogen. Forty-three healthy workers exposed to a wide range of benzene levels (median 31 ppm, 8-hour time-weighted average) were compared with 44 unexposed controls in Shanghai, China. Benzene exposure was associated with increases in rates of monosomy 5 and 7 but not monosomy 1, and with increases in trisomy and tetrasomy of all three chromosomes. In the exposed workers, long-arm deletion of chromosomes 5 and 7 was increased up to

3.5-fold in a dose-dependent fashion. These results show that leukemia-related changes in chromosomes 5 and 7 are detectable by FISH in peripheral blood of otherwise healthy benzene-exposed workers, and that these changes may be useful biomarkers of early biological effects of benzene exposure. (Zhang L, Rothman N, Wang Y, Hayes RB, Li G, Dosemeci M, Yin S, Kolachana P, Titenko-Holland N, Smith MT. Increased aneusomy and long arm deletion of chromosomes 5 and 7 in the lymphocytes of Chinese workers exposed to benzene. *Carcinogenesis* 1998;19:1955-1961)

Occupation and Risk of Pancreatic Cancer in China

A large population-based case-control study was conducted in Shanghai, China, to assess occupational risks of pancreatic cancer. Among men, increased risk was associated with employment as an electrician (OR=7.5), with a threefold elevation observed for those with the highest exposure level to electromagnetic fields. However, women with heavy exposure to electromagnetic fields were not at excess risk of pancreatic cancer. Elevated risks were also found for men employed as metal workers (OR=2.1), toolmakers (OR=3.4), plumbers or welders (OR=3.0), and glass formers, potters, painters, or construction workers (OR=2.6). Among women, textile workers were at increased risk (OR=1.4). These results suggest that increased risk of pancreatic cancer may be associated with work as an electrician and in occupations associated with exposures to metal and textile dusts. (Ji BT, Silverman DT, Dosemeci M, Dai Q, Gao YT, Blair A. Occupation and pancreatic cancer risk in Shanghai, China. *Am J Ind Med* 1999;35:76-81)

Gallstones and Cholecystectomy and Risk of Cancers of the Liver, Biliary Tract, and Pancreas

A population-based cohort study in Denmark was carried out to examine the association between gallstones and cholecystectomy and risk of liver, biliary tract, and pancreatic cancers. A total of 60,176 patients hospitalized for gallstones between 1977 and 1989 were followed for cancer incidence until the end of 1993. Among patients without cholecystectomy and with 5 years or more of follow-up, risk was significantly elevated for cancers of the liver (standardized incidence ratio [SIR]=2.0) and gallbladder (SIR=2.7). Excess risk of liver cancer was seen only among patients with a history of hepatic disease. Among cholecystectomy patients, risk was significantly elevated for cancers of ampulla of Vater (SIR=2.0) and pancreas (SIR=1.3) but not for cancers of the liver or extrahepatic bile duct. These findings confirm that gallstone disease increases risk of gallbladder cancer and that cholecystectomy increases risk of cancers of ampulla of Vater and pancreas. (Chow WH, Johansen C, Gridley G, Mellemkjaer L, Olsen JH, Fraumeni JF Jr. Gallstones, cholecystectomy and risk of cancers of the liver, biliary tract and pancreas. *Br J Cancer* 1999;79:640-644)

Diabetes Mellitus and Risk of Renal Cell Cancer

A population-based retrospective cohort study was carried out in Sweden to investigate the relation between diabetes mellitus and risk of renal cell cancer. Using national registry data, 153,852 patients diagnosed with diabetes mellitus between 1965 and 1983 were identified and followed through 1989. After exclusion of the first year of observation, 267 incident cases of renal cell cancer occurred in diabetic patients, compared with 182.4 expected. Increased risk was observed for both women (SIR=1.7) and men (SIR=1.3) throughout the period of follow-up. Risk of kidney cancer mortality was higher in women than men. These results indicate that patients with diabetes mellitus are at increased risk of renal cell cancer. (Lindblad P, Chow WH, Chan J, Bergstrom A, Wolk A, Gridley G, McLaughlin JK, Nyren O, Adami HO. The role of diabetes mellitus in the aetiology of renal cell cancer. *Diabetologia* 1999;42:107-112)

Diet and Risk of Prostate Cancer

Prostate cancer is the most common malignancy in men in the United States, with substantially higher rates among blacks than whites. A population-based case-control study in three geographic areas was carried out to evaluate the reasons for the racial disparity. Dietary factors were evaluated through interviews with 449 black men and 483 white men with prostate cancer and 1,201 control subjects. Increased intake of foods high in animal fat was linked to prostate cancer among black men but not white men. However, the risk of advanced prostate cancer was higher in both racial groups with increasing consumption categories of foods high in animal fat. Increased intake of animal fat as a proportion of total caloric intake also showed positive but weaker associations with advanced prostate cancer. Thus, the greater risk of prostate

cancer among blacks than whites may be related to the differential effects of animal fat in these populations. (Hayes RB, Ziegler RG, Gridley G, Swanson C, Greenberg RS, Swanson GM, Schoenberg JB, Silverman DT, Brown LM, Pottern LM, Liff J, Schwartz AG, Fraumeni JF Jr, Hoover RN. Dietary factors and risks for prostate cancer among blacks and whites in the United States. *Cancer Epidemiol Biomarkers Prev* 1999;8:25-34)

Familial Cancer History and Risk of Prostate Cancer

Within a population-based cohort study in Iowa, the cancer history of parents and siblings of 101 incident cases of prostate cancer was evaluated to assess risk of this malignancy in relation to family cancer history. After adjustment for major confounders (age, alcohol intake, and dietary factors), increased risk was associated with having a family history of prostate cancer, with risk being greater for a brother (relative risk [RR]=4.5) than a father (RR=2.3) having had prostate cancer. Increased risk was also associated with having a family history of breast or ovarian cancer in a mother or sister (RR=1.7) and with a history of both prostate and breast or ovarian cancers (RR=5.8). No association was found with a family history of colon cancer. These results confirm that a family history of prostate cancer is a strong risk factor for this malignancy and indicate that a family history of breast or ovarian cancer may also increase risk. (Cerhan JR, Parker AS, Putnam SD, Chiu BCH, Lynch CF, Cohen MB, Torner JC, Cantor KP. Family history and prostate cancer risk in a population-based cohort of Iowa men. *Cancer Epidemiol Biomarkers Prev* 1999;8:53-60)

Radiation Epidemiology Branch

Pooled Analysis of Case-control Studies of Thyroid Cancer

A pooled analysis of 14 case-control studies was carried out to evaluate major risk factors involved in the etiology of thyroid cancer. Although the pooled population was composed of 2,725 cases (2,247 females and 478 males) and 4,776 controls (3,699 females and 1,077 males), analyses were limited to study populations having relevant data. Analysis of menstrual status found slight elevations in risk associated with natural (OR=1.33) and artificial menopause (OR=1.84) compared with premenopause. Parity, spontaneous or induced abortions, and history of infertility were not associated with thyroid cancer risk. Later age at first birth was associated with a small increased risk (OR=1.14). No relation was seen between risk and oral contraceptive (OC) use, including duration of use, age at first use, or use before first birth. Increased risk was found for current OC users (OR=1.45), but declined with increasing time since stopping (OR=1.06 for at least 10 years). Risk was not increased with use of hormone replacement therapy, but was slightly elevated for use of fertility drugs (OR=1.57) and for lactation suppression treatment (OR=1.48). These findings indicate generally weak associations between risk of thyroid cancer and menstrual status, reproductive factors, or OC use. (Negri E, Ron E, Franceschi S, Dal Maso L, Mark SD, Preston-Martin S, McTiernan A, Kolonel L, Kleinerman R, Land C, Fan J, Wingren G, Galanti MR, Hallquist A, Glattre E, Lund E, Levi F, Linos D, Braga C, La Vecchia C. A pooled analysis of case-control studies of thyroid cancer. Parts I, II, III. *Cancer Causes Control* 1999;10:131-166)

Viral Epidemiology Branch

Adult T-cell Leukemia/Lymphoma Incidence in Central Brooklyn

A pilot surveillance program was established to identify cases of adult T-cell leukemia/lymphoma (ATL), a rare outcome of infection with human T-lymphotropic virus (HTLV-I), in seven hospitals in central Brooklyn. Twelve incident cases of ATL were reported, all among persons of Afro-Caribbean descent, giving an annual incidence in this community of about 3.2 per 100,000 person-years and a female-to-male ratio of 3:1. These results provide evidence that HTLV-I infection and ATL are endemic in central Brooklyn, where a large Caribbean migrant community is located, and suggest the need for disease surveillance and intervention efforts. (Levine PH, Dosik H, Joseph EM, Felton S, Bertoni MA, Cervantes J, Moulana V, Miotti AB, Goberdhan LJ, Lee SL, Daouad A, DaCosta M, Jaffe ES, Axiotis CA, Cleghorn FR, Kahn A, Welles SL. A study of adult T-cell leukemia/lymphoma incidence in Central Brooklyn. *Int J Cancer* 1999;80:662-666)

Comparison of Predictive Models of HIV-disease Progression in Gay Men

The performance of HIV-I RNA models, based on human leukocyte antigen (HLA), was compared in predicting the rate of HIV-1 disease progression by

using both linear regression and neural network models across two cohorts of homosexual men. A total of 139 seroconverters from an AIDS cohort study was used as the training set, and a total of 97 seroconverters from a cohort of gay men was used to assess the reliability of the predictive models. Both viral load ($p < 0.0001$) and HLA markers ($p = 0.001$) were strongly predictive of disease progression. Consideration of both HLA markers and viral load offered no significant predictive advantage over viral load alone in most cases. Viral load, HLA scores, and rapid disease progression were moderately correlated. Viral load is a stronger predictor of disease progression than are previously developed HLA models, but neural network methods and further refined HLA models may offer additional prognostic information, especially for cases of rapid progression. (Ioannidis JPA, Goedert JJ, McQueen PG, Enger C, Kaslow RA. Comparison of viral load and human leukocyte antigen statistical and neural network predictive models for the rate of HIV-1 disease progression across two cohorts of homosexual men. *J Acquir Immune Defic Syndr Hum Retrovirol* 1999;20:129-136) ■

SECOND CANCER WORKING GROUP

Members of the Second Cancer Working Group are DCEG scientists who are interested in studying multiple primary cancers. The group meets every few months. Recent topics have included collaborative opportunities with the national Childhood Cancer Survivors Study. DCEG scientists interested in joining this group should contact Dr. Lois Travis in the Radiation Epidemiology Branch at (301) 594-7201, or e-mail her at *travisl@epndce.nci.nih.gov.*

FELLOWS REPORT

Get Ready for FARE 2000!

It is time to start working on your abstract for the Fellow's Award for Research Excellence (FARE 2000). Several changes give NIH fellows a better chance for winning this award, which pays for domestic travel to participate in scientific meetings. The "pay line" has been increased to 25 percent, study sections are being realigned, and new sections are being created to keep abreast of current trends in abstract submissions. In addition, it is now possible to enter an abstract based on previously published material, provided that it did not appear in print before January 1, 1999. Although there is a 5-year postdoctoral eligibility limit, predoctoral fellows enrolled in a doctoral degree program can now enter the competition. Applications for FARE 2000 will be accepted between May 3 and June 1. Further information about FARE 2000 can be accessed at *ftp://helix.nih.gov/felcom/www/ fare.html.* ■

Frank Groves

Survival Skills Workshop

The NIH Fellows Committee, the Office of Education, and the Office of Research on Women's Health are sponsoring a "Survival Skills Workshop" on personnel management. This workshop will teach skills for managing employees and postdoctoral fellows, and will be held May 10 at 8:30 am in the Lipsett Amphitheater of the Clinical Center. ■

Sandra Petralia

NEWS FROM THE TRENCHES

Environmental Epidemiology Branch

Drs. Mark Schiffman, Allan Hildesheim, and Kai-Li Liaw presented papers at the International Papilloma Virus Conference in January in Charleston, South Carolina. Dr. Schiffman spoke about a method to estimate population-attributable fractions for different molecular pathways to cervical cancer. Dr. Hildesheim described factors involved in the progression of low-grade to high-grade cervical disease and cancer. Dr. Liaw, who is now at the University of Pittsburgh, spoke about an analysis of interactions between various human papillomavirus (HPV) types in relation to risk of cervical cancer.

At a World Health Organization meeting held in February in Geneva, Dr. Hildesheim spoke about planning clinical trials for vaccine efficacy against HPV infection, and Dr. Schiffman presented a paper on the disease burden of cervical cancer. ■

Genetic Epidemiology Branch

At a meeting in December sponsored by the Pulmonary Physicians of Finland, Dr. Neil Caporaso presented findings on the genetics of smoking behavior. The meeting focused on new approaches to therapy by exploiting the biology of lung cancer to improve treatment outcomes.

Dr. Maria Teresa Landi and Dr. Andrew Bergen gave a joint lecture, "Epidemiology of Lung Cancer," in January at the George Washington University School of Medicine. ■

Occupational Epidemiology Branch

In March, Dr. Mary Ward presented an invited poster at the American Cancer Society Schilling Conference in Santa Cruz, California. Her presentation, "Environmental Exposures to Agricultural Chemicals and Risk of Non-Hodgkin's Lymphoma," described an association between nitrates in drinking water in eastern Nebraska and risk of lymphoma. She also presented information about a new method for estimating bystander exposure to agricultural pesticides by using a geographic information system.

Dr. Patricia Stewart traveled to Oslo in February to give an invited presentation at Airmon '99, an event sponsored by Norway's National Institute of Occupational Health. She reviewed the types of data needed for exposure assessment in epidemiologic studies, and described a comprehensive system to assess exposure.

Dr. Debra Silverman and Dr. Mustafa Dosemeci presented the design elements of the diesel miners' study at the Health Effects Institute's Diesel Research Strategy Workshop in March in Stone Mountain, Georgia. The workshop was attended by researchers from around the world who are conducting studies on the health effects of exposure to diesel exhaust.

Dr. Michael Alavanja attended a workshop in March on mechanistic models for radon carcinogenesis, which was sponsored by the Institute of Epidemiology, University of Munich. He spoke about the epidemiology of lung cancer and the risks associated with exposure to residential radon. Dr. Alavanja described a unique dosimeter that uses glass surfaces in the household to measure historical levels of radon exposure.

Mr. Barry Waddell, a Howard Hughes Medical Institute-NIH Research Scholar, presented the results of his work on agricultural exposure to organophosphate insecticides and risk of lymphoma at the annual Research Scholars meeting in March. ■

Radiation Epidemiology Branch

In March, Dr. Elaine Ron presented a paper on radiation and cancer risk at the Schiller Conference, which was sponsored by the American Cancer Society in Santa Cruz, California. Dr. Martha Linet also attended, as a discussant following Dr. Ron's presentation.

In April, Dr. Ron presented "Radiation Effects on the Thyroid: Emphasis on Iodine-131" at the annual meeting of the National Council on Radiation Protection in Arlington, Virginia.

Dr. Linet was NCI's representative and speaker on "Recent Trends and NCI Initiatives in Childhood

Cancer" at the workshop Children's Health Priorities: Setting the Best Course for Our Nation's Children. The workshop was sponsored by the Public Health Policy Advisory Board, and was held in December at the National Academy of Sciences.

Dr. Charles Land participated in a symposium, organized by the Nuclear Regulatory Commission in March, on the validity of extrapolating risk estimates for high to very low doses of radiation exposure. Dr. Land, cochair of the Ionizing Radiation Task Group of the Etiology Working Group of the National Action Plan on Breast Cancer, also presented an overview of the group's radiation-related activities to scientists and breast cancer advocates at a workshop in February.

At a seminar in December at Oak Ridge, Tennessee, Dr. Andre Bouville talked about "Environmental Dose Reconstruction and Epidemiological Studies at the National Cancer Institute." He also gave a seminar on "Exposure of the American People to Iodine-131 Fallout from the Nevada Bomb Test" in February in Memphis.

Ms. Rochelle Curtis and Dr. Catherine Metayer attended the International Bone Marrow Transplant Registry / Autologous Bone Marrow Transplant Registry meeting in March in Keystone, Colorado. Dr. Metayer presented a paper on secondary myelodysplastic syndrome and leukemia after autologous blood and marrow transplants for lymphoma.

Dr. Kiyo Mabuchi, a visiting scientist from Radiation Effects Research Foundation (RERF), along with Dr. Ron and Dr. Land, organized a joint Radiation Epidemiology Branch-RERF workshop on research opportunities for molecular genetic studies among atomic bomb survivors. The purpose of the workshop was to exchange ideas and techniques that would lead to new research in breast, thyroid, skin, brain, and colon cancers. The workshop, held at Executive Plaza in February and moderated by Dr. Margaret Tucker, was attended by Drs. Sadayku Ban, Kiyohiro Hamatani, Keisuke Iwamoto, Terumi Mizuno, and Nori Nakamura from the Departments of Radiobiology and Genetics at RERF, and by NCI scientists. ■

DCEG PEOPLE IN THE NEWS

Congratulations to **Dr. Wong-Ho Chow**, who was awarded tenure by the NIH. Dr. Chow received a B.S. in nutrition *(cum laude)* from the State University of New York, an M.P.H. in epidemiology from Yale University, and a Ph.D. in epidemiology from the University of Washington School of Public Health. She was a member of the Biostatistics Branch from 1991 to 1995, and has been a tenure-track investigator in the Occupational Epidemiology Branch since 1996. Dr. Chow is internationally recognized for her work in understanding the causes of renal cell cancer and adenocarcinomas of the esophagus and gastric cardia.

Ms. Nora Jansen, a participant in the stay-in-school program in the Occupational Epidemiology Branch, has been selected for the Montgomery Scholars Program at Montgomery College. The program provides free tuition for 2 years and an all-expense-paid summer course at Cambridge University in England.

Dr. Alfred Knudson has been selected to receive the 1999 W. W. Sutow Visiting Professorship Award at the University of Texas M.D. Anderson Cancer Center.

Dr. Martha Linet was chosen as the first-prize recipient in the Henry L. Moses Competition in the clinical medicine category. The award is sponsored by the Montefiore Hospital and Medical Center in New York, and was bestowed on Dr. Linet for her work on residential magnetic field exposures in relation to childhood acute lymphoblastic leukemia.

DCEG received two important awards for its extraordinary participation in the 1998 Combined Federal Campaign (CFC). The Division received The President's Award, the highest honor that can be attained by an organization, for achieving an average gift of $150 per full-time permanent employee and for exceeding a 75 percent participation rate. In addition, the Division received a special award for attaining 100 percent of its goal. **Ms. Kit Fox**, who served as DCEG's keyworker, was honored with a Special Service Award for her efforts in coordinating the Division's CFC activities. ■

COMINGS...GOINGS...

Ms. Iliana Aguirre, a student at Montgomery College, joined the Radiation Epidemiology Branch through NCI's stay-in-school program.

Dr. Andrew W. Bergen, a training fellow in the Genetic Epidemiology Branch, has accepted a position as Laboratory Director of Biognosis US, a new company in Rockville focused on the genetics of eating disorders. He will continue to collaborate with DCEG scientists on studies of the genetic determinants of lung cancer and smoking behavior.

Mr. David DeCarlo recently began working in the Office of the Director, DCEG, through NCI's stay-in-school program. He is majoring in finance at Montgomery College, and plans to transfer to the University of Maryland in the fall.

Ms. Betsy Duane joined the Office of the Director, DCEG, as Communications Coordinator. She will manage and prepare communications related to DCEG's research projects, particularly high-visibility efforts that have intense public and Congressional interest. Ms. Duane received her bachelor's degree in psychology from Bucknell University and did graduate work in administration at the University of Maryland. Prior to coming to DCEG, she was with NCI's Office of Legislation and Congressional Activities. Ms. Duane is located in EPS/8098, and can be reached at 594-7480.

Ms. Kerry Giglio recently began working in the Biostatistics Branch through NCI's stay-in-school program. She is a student at Montgomery College.

Dr. Kevin Oeffinger, a pediatric oncologist from the University of Texas Southwestern Medical Center (UTSMC), joined the Radiation Epidemiology Branch in March as part of the visiting fellowship program. Dr. Oeffinger, who directs the After Cancer Experience Young Adult Program at UTSMC, will focus on studies of second cancers following pediatric and adolescent malignancies.

Dr. Ruth Pfeiffer joined the Biostatistics Branch as a postdoctoral training fellow. She received her doctorate in mathematical statistics from the University of Maryland in August, completing a research dissertation entitled "Statistical Problems for Stochastic Processes with Hysteresis." Dr. Pfeiffer held a Fulbright Fellowship in 1992 and a NASA Global Change Fellowship from 1995 to 1998. She is located in EPS/8017, and can be reached at 594-7832.

Dr. Jim Sontag, Chief of the Office of Division Operations and Analysis, retired from government service in February. He coordinated activities that broadly affected the Division, including planning, policy, communications, program analysis, and many other areas vital to DCEG's operations. At a farewell party, Dr. Joseph Fraumeni described Dr. Sontag's contributions as indispensable to the expanding research program of the Division and critical to whatever successes it can claim.

Ms. Kathy Stine has joined the Radiation Epidemiology Branch as Program Analyst. Ms. Stine will manage the administrative activities of the Chornobyl Research Unit. She received her B.S. in business and management from the University of Maryland in 1988 and her M.B.A. from Hood College in 1993. Prior to coming to DCEG, Ms. Stine was an Administrative Officer with the Building 37 Administrative Resource Center, NCI.

Dr. Rebecca Troisi, a training fellow in the Environmental Epidemiology Branch, has accepted a position as a senior analyst at Social and Scientific Systems, a company in Bethesda. She will be working with staff at the National Institute of Diabetes and Digestive and Kidney Diseases on diabetes research.

Dr. Jim Vaught joined the Office of the Director, DCEG, to coordinate biospecimen repository and processing activities across the Division. He received a bachelor's degree in chemistry from the University of Georgia and a Ph.D. in biochemistry from the Medical College of Georgia. Dr. Vaught has additional training in epidemiology, computer science, government contracting, and molecular biology. He was previously the Director of Biorepository Services at MA BioServices in Rockville, and served as the project director for a biochemical epidemiology support services contract. Dr. Vaught is located in EPS/7020, and can be reached at 594-7647.

Dr. Tamara Zemlo, a training fellow in the Environmental Epidemiology Branch, has taken a position as a policy analyst in the Office of Public Affairs of the Federation of American Societies for Experimental Biology. ■

CALENDAR OF EVENTS

Upcoming events of interest to DCEG staff members are listed below.

Date	Event
May 6	Seminar: Folates and Cervical Cancer Dr. Stephanie Weinstein 10:30–12:00, EPN / H
May 6	Senior Advisory Group Meeting 1:00–4:00, EPN / G
May 7	Seminar: Partial Questionnaire Design for a Study on Occupational Asthma Dr. Matt Wand, Department of Biostatistics, Harvard University 10:30–12:00, EPS / 7107
May 10	Survival Skills Workshop 8:30, Lipsett Amphitheater, Clinical Center
May 17	Seminar: Ethnicity, Salt, Hypertension and Stomach Cancer Dr. D. Gareth Beevers 10:30–12:00, EPN / H
May 27	Seminar: DNA Adduct Load Dr. Gerald Wogan 10:30–12:00, EPN / H
June 3	Senior Advisory Group Meeting 1:00–4:00, EPN / G
June 7–9	National Cancer Advisory Board
June 7–9	General Motors Cancer Research Foundation Conference on Genetic Instability and Cancer Masur Auditorium
June 10	Seminar: Case-control Study of Six Cancer Sites in Iowa: Methods, Selected Findings, and Data Availability Dr. Ken Cantor 10:30–12:00, EPN / J
June 24	Seminar: Plans and Status of the New Study of Non-Hodgkin's Lymphoma Dr. Patricia Hartge 10:30–12:00, EPN / J
June 29–30	Site Visit: Occupational Epidemiology Branch
July 1	Senior Advisory Group Meeting 1:00–4:00, EPN / G
July 19	Board of Scientific Counselors
July 30	Senior Advisory Group Annual Retreat 8:30–5:00, Kentlands Mansion

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