

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
National Institutes of Health

Cancer Prevention Fellowship Program

APPLICATION DEADLINE: SEPTEMBER 1, 2008

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http://cancer.gov/prevention/pob

IMPORTANT DATES:

Application deadline: September 1, 2008 All application materials must be postmarked on or before this date.

One-day interview: October 22, 23, or 24, 2008

Notification: November 2008 Appointment starts: July 2009

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Office of Preventive Oncology Cancer Prevention Fellowship Program 2007



Front Row: Jackie Lavigne, Lisa Chu, Elizabeth Hsu, Rosemary Braun, Tram Lam, Kathryn Weaver, Genevieve Dunton, Helen Sullivan Second Row: Nina Betru, Salma Shariff-Marco, Erika Waters, Paul Doria-Rose, Roycelynn Mentor-Marcel, Trishna Dey, Gretchen Gierach Third Row: Simon Lee, Brid Ryan, Gwen Murphy, Joanne Watters, Lesley Anderson, Amanda Black, Jill Koshiol

Fourth Row: Gerd Bobe, Adeyinka Laiyemo, Goli Samimi, Neal Freedman, Sharon Glynn, Jonine Figueroa, Dana Van Bemmel, Jonathan Wiest

Not Pictured: Blanca Bonilla, Sylvia Chou, Yvonne Hunt, Damali Martin, James McClain, Kristy O'Brien, Susan Olivo-Marston, Aaron Schetter, Jasmin Tiro, Petra Tsuji, John Tyburski, David Wheeler

DIRECTOR'S MESSAGE

Preventing cancer is one of the most important scientific and public health goals of the 21st Century. To achieve that goal, the Nation needs leaders: scientists and health professionals trained in the principles and practice of cancer prevention and control. At the National Cancer Institute (NCI) the Cancer Prevention Fellowship Program (CPFP) provides state-of-the-art training in cancer prevention and control.

The centerpiece of the CPFP is mentored research at the NCI. With input from senior scientific mentors and from program scientific staff, each fellow develops original scientific projects and reports findings at scientific meetings and in leading journals. The primary goal is for each fellow to develop an independent research program in cancer prevention.

Research opportunities for Cancer Prevention Fellows reflect the broad origins and applications of many biomedical sciences relevant to public health and clinical medicine. Opportunities exist for basic science laboratory studies, clinical studies, epidemiologic studies, intervention trials, and studies of the biological and social aspects of health behavior. Specialty training now exists in molecular prevention, ethics of prevention and public health, and clinical cancer prevention. Examples of specific research opportunities and individual mentors at the NCI are found in this catalog and on our website. Further, a new initiative of the NCI and the Food and Drug Administration (FDA) affords fellows the prospect of applying research in drugs, biologics, or medical devices to the field of cancer prevention.

The CPFP also offers an opportunity for fellows to receive a Master of Public Health (M.P.H.) degree at any accredited program in the United States, Other educational activities

include the NCI Summer Curriculum in Cancer Prevention, weekly seminars, and professional development workshops.

Our program is regularly evaluated and growing. Our alumni can be found across the country taking the lead at cancer centers, universities, government agencies, research firms, policy organizations, and in clinical practice. Many former fellows now act as mentors, assisting those who are following in their footsteps.

As Director of the CPFP, I am committed to providing a comprehensive postdoctoral program that is flexible enough to permit individual creativity and resourceful enough to provide opportunities for meaningful discoveries. Structured to promote a collaborative spirit of fellowship, the program recruits diverse applicants. We work hard to provide an equitable and competitive application process. We believe that the CPFP provides a solid foundation upon which fellows can build knowledge and experience and become leaders.

On behalf of all of us who are committed to eliminating death and suffering from cancer patients, physicians and nurses, researchers, other scientists, and the general public-I urge you to join us in this endeavor. Please read the eligibility requirements and submit your application. We look forward to hearing from you.

Jonathan S. Wiest, Ph.D.

Acting Director, Cancer Prevention Fellowship Program National Cancer Institute



Program Description

Overview

The overarching goal of the CPFP is to provide a strong foundation for clinicians and scientists to train in the field of cancer prevention and control. As part of the program, we offer training toward an M.P.H. degree at an accredited university during the first year, followed by mentored research with investigators at the NCI. In addition to the outstanding opportunities for cutting-edge research in the basic, quantitative, and social and behavioral sciences that have been the hallmarks of the CPFP since its inception in 1987, specialty training is offered in clinical cancer prevention research and in the ethics of prevention and public health. Further, a partnership with the NCI and FDA provides opportunities for prevention research in drugs, biologics, and medical devices. Other educational opportunities are provided throughout the fellowship to complement the research training, including the NCI Summer Curriculum in Cancer Prevention, the Molecular Prevention Laboratory, the NCI Cancer Prevention and Control Colloquia Series, and the weekly Fellows' Research Meeting, as well as leadership and professional development training and a variety of training opportunities outside the NCI. These aspects of the program, as well as eligibility requirements, application procedures, selected bibliography of current and former fellows' recent publications, and a glimpse at life in the Washington, D.C. area are described in this catalog. Additional information about the CPFP can be found on our website at http://cancer.gov/prevention/pob.

Master of Public Health

One of the unique features of the CPFP is the opportunity to receive formal, academic training in public health. By pursuing an M.P.H. degree, fellows learn about the current role of cancer prevention in public health and understand cancer prevention in the historical context of public health. The M.P.H. provides individuals with a strong foundation in the quantitative sciences of epidemiology and biostatistics. Fellows who already possess an M.P.H. degree, a Dr.P.H. degree, or a Ph.D. degree in biostatistics or epidemiology typically come directly to the NCI to begin their research.

Once accepted into the CPFP, each fellow is responsible for arranging admission to a university offering an M.P.H. program that can be completed in 12 months or less. The NCI will pay the tuition, fees, book allowance, and fellow's stipend during this year. It is expected that all M.P.H. requirements will be completed by the start of the NCI Summer Curriculum in Cancer Prevention.

Fellows pursuing an M.P.H. degree are required to remain in the CPFP for a period twice the length of time of the M.P.H. training or to reimburse the Government the cost of the training and expenses. For example, attending a 12-month M.P.H. program requires a 24-month payback.

It is the fellow's responsibility to check with the university about admission, courses, and GRE requirements, as well as to ensure that the M.P.H. can be completed within the one-year time frame. Typically, universities require mathematics, biology, and chemistry courses at the undergraduate level; a current (usually within 5 years) GRE score; and completion of the TOEFL (for foreign education) before acceptance into an M.P.H. program. The MCAT is the equivalent GRE requirement for physicians. To obtain information about the GRE, call (609) 771-7670; write to the Graduate Record Examination, P.O. Box 6000, Princeton, NJ 08541-6000; or visit the website http://www.gre.org.

Listed below are some of the current one-year, accredited M.P.H. programs with their application due dates. Cancer Prevention Fellows have graduated from the universities marked **. For additional and updated information on M.P.H.

programs, refer to the Association of Schools of Public Health website http://www.asph.org.

- Harvard University** (December 15, priority; February 15, final)
- Johns Hopkins University** (December 1)
- Tulane University** (March 15, for summer; April 15, for fall)
- Uniformed Services University of the Health Sciences** (January 15)
- University of Kansas Medical Center (March 31)
- University of Minnesota** (Priority December 15; Final April 15)
- University of Southern Mississippi (April 15)
- University of North Carolina** (January 1)
- Virginia Commonwealth University (January 1)

Mentored Research

Under the shared guidance of an individual NCI preceptor and the CPFP scientific staff, fellows will develop original research projects in cancer prevention and control. An overview of the preceptorships is provided in this catalog (refer to Preceptorships section), and a more complete listing is provided on our website.

http://cancer.gov/prevention/pob http://ccr.cancer.gov/ http://cancercontrol.cancer.gov/index.html http://dceg.cancer.gov/

Collaboration with investigators throughout the NCI is encouraged. Research opportunities include, but are not limited to:

- Biomarker development
- Chemoprevention studies
- Clinical cancer prevention research
- Effectiveness and outcomes research
- Epidemiology (clinical, environmental, genetic, molecular, nutritional)
- Ethics and evidence-based decision making (theoretical and practical studies)
- Health disparities and special populations
- Laboratory-based research (chemoprevention, molecular biology and genetics, nutritional science)
- Screening and early detection
- Social and behavioral research
- Statistical methodology (biometry and bioinformatics)

Additional Program Tracks

NCI-FDA JOINT TRAINING IN CANCER PREVENTION

Cancer Prevention Fellows are eligible to participate in the newly established NCI-FDA joint training in cancer prevention initiative. This novel component of the CPFP provides training in cancer prevention and in the development and approval processes of drugs, biologic agents, devices, or nutritional products. The program's interdisciplinary training will enable scientists to more rapidly move novel chemopreventive agents and early detection methods from the laboratory to the community. This training incorporates unique features while maintaining the identical structure of the parent program, including eligibility, stipend, benefits, application procedures, and evaluations.

Background and Rationale. In 2003, the NCI Director and the FDA Commissioner joined forces to more rapidly identify effective cancer preventive agents and cancer treatments, thereby accelerating the process of introducing new agents into the clinic. Arising from this joint commitment was an initiative to train postdoctoral scientists and clinicians in research in cancer prevention, drug development, and regulatory review. Research training opportunities exist in several centers at the FDA in the areas of biologics (Center for Biologics Evaluation and Research (CBER)), drugs (Center for Drug Evaluation and Research (CDER)), medical devices and imaging (Center for Devices and

Radiologic Health (CDRH)), and nutrition science and policy (Center for Food Safety and Nutrition (CFSAN)).

The NCI-FDA joint training in cancer prevention initiative will provide the opportunity for fellows to participate in all the activities of the CPFP at the NCI and in research and product development and regulatory review at the FDA. Combining training in public health, cancer prevention, and product development and regulatory research will allow individuals to develop expertise across three disciplines, thus offering the possibility of developing novel agents and products, designing and implementing clinical trials in chemoprevention and early detection, and advancing the nutritional sciences.

Brief Program Description. The program provides:

- Master's degree in clinical investigation (M.S.) or public health (M.P.H.) at any one-year, accredited university program
- NCI Summer Curriculum in Cancer Prevention
- Mentored research opportunities among the product and clinical divisions of participating FDA Centers, including CBER, CDER, CDRH, and CFSAN
- Coursework and training in product development and approval processes, in development of product standards and guidance documents, and in research-related regulatory review

CLINICAL TRIALS IN CANCER PREVENTION AND CONTROL are associated with

unique issues, depending upon whether study efforts relate to primary, secondary, or tertiary prevention. Concerned with maintaining health in the population, cancer prevention trials often require surrogate endpoints, in contrast to cancer treatment trials, given that study subjects are often healthy volunteers and that tumor response and survival measures are not always applicable or feasible trial endpoints. A clear understanding of criteria for acceptable surrogate biomarker and clinical endpoints is required in prevention trials; in addition, understanding and developing criteria for acceptable drug toxicity of novel chemopreventive agents or agents that have approved indications limited to the treatment setting is necessary. Similarly, developing effective modalities for screening and early detection requires an understanding of risk assessment and benefits when applied to healthy populations. Combined with an understanding of regulatory requirements for product safety and efficacy, this knowledge can be incorporated into the development and testing of products at early stages in order to bring safe and effective drugs, biologics, and devices from the bench to the population.

- Additional coursework in clinical trials methodology, Institutional Review Board (IRB) processes, epidemiology and biostatistics, toxicology and pharmacology, bioethics, and health policy, as needed
- Professional development and leadership training

Research Opportunities. General categories of research topics include:

- Cancer risk of drug, device, and gene therapy products
- Cellular substrates in vaccine development
- Clinical trial design and analytic methodology
- Development and selection of biomarkers and clinical endpoints in clinical trials
- Development of chemopreventive agents
- Genetic toxicologhy and cancer prevention
- Genomic and proteomic approaches to early detection of cancer
- Molecular and genetic approaches in product development
- Nutrition science and policy
- Screening and early detection
- Vaccination and cancer prevention Further information is available at http://

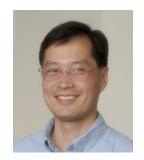
iotftraining.nci.nih.gov/prevent.html

CLINICAL CANCER PREVENTION RESEARCH

Clinical cancer prevention research training, with its focus on

translational prevention research, is one of the newest additions to the CPFP. Clinicians have the opportunity to participate in multidisciplinary research, the hallmark of the CPFP, in order to help bridge the gap between clinical and pre-clinical cancer prevention science. This training incorporates unique features while maintaining the identical structure of the parent program, including eligibility, stipend, benefits, application procedures, and evaluations.





"The CPFP is a superb training program. It has given me the opportunity to work with leading researchers across various disciplines and to capitalize on the immense data resources at the NCI. Most importantly, the program has offered me the support and freedom to pursue my own research interests."

Paul Han, M.D., M.A., M.P.H., Fellow Alumnus, Division of Cancer Control and Population Sciences, NCI

decades, with advances in the basic sciences, innovations in bioengineering, and findings from epidemiologic studies, the multidisciplinary field of cancer prevention has flourished. Through clinical research, the application of these discoveries has led to the identification of effective chemopreventive agents, novel early detection technologies, and recognition of individuals at high risk of developing cancer. Additionally, clinical intervention trials, as exemplified in the nutritional and behavioral sciences, have yielded successful cancer prevention strategies.

The design, implementation, analysis, and interpretation of clinical prevention studies is a relatively new research area for which few clinicians are adequately trained. The opportunity now exists within the CPFP for postdoctoral clinicians, including physicians, nurses, psychologists, and pharmacists, to combine formal training in clinical research methodology with their clinical acumen and interest in cancer prevention.

Brief Program Description. The program provides:

- Master's degree in clinical investigation (M.S.) or public health (M.P.H.) at any one-year, accredited, university program
- NCI Summer Curriculum in Cancer Prevention
- Mentored research opportunities at the NCI, the National Institutes of Health's (NIH) Warren G. Magnuson Clinical Center, the National Naval Medical Center, and local universities
- Opportunity to obtain clinical privileges at nearby medical institutions at which research is carried out, provided that eligibility criteria are fulfilled
- Experience in clinical protocol review in NCI's Division of Cancer Prevention
- Additional coursework in clinical trials methodology, bioethics, health policy, epidemiology, and biostatistics, as needed
- Professional development and leadership training

Research Opportunities. General categories of research topics include:

- Behavioral intervention research
- Biomarker development
- Clinical studies in high-risk populations
- Clinical trials of chemopreventive agents
- Design and analysis of prevention trials
- Epidemiology (clinical, molecular, genetic, nutritional, environmental)
- Ethical issues in clinical prevention
- Ethics and evidence-based clinical decision making (theoretical and practical studies)
- Evaluation and outcomes research of clinical prevention practices
- Health disparities and special populations research
- Laboratory-based research (chemoprevention studies, molecular biology and genetics, molecular carcinogenesis, nutritional science)
- Nutritional intervention studies
- Screening and early detection trials
- Studies of genetic susceptibility and cancer

APPLICATIONS OF CANCER PREVENTION STRATEGIES require a direct link to individuals and human populations. Clearly, collaborations between clinical and pre-clinical scientists will bolster the understanding of mechanisms of carcinogenesis and aid in identifying targets for prevention. However, despite creative animal and laboratory models, humans with their innate and acquired complexity are essential for intervention studies. Also deeply intertwined within the broad field of clinical prevention, and meriting further attention, are crucial issues relating to drug development processes, protection of human subjects, and ethical implications associated with prevention research.

ETHICS OF PREVENTION AND PUBLIC HEALTH

In July 2002, the CPFP established specialty training in the ethics of prevention and public health. The CPFP has for years provided a multidisciplinary training environment for postdoctoral biomedical and social scientists, clinicians, and public health professionals. Training in the ethics of prevention and public health represents a new initiative within this well-established and highly regarded program. In addition to its unique features, the structure of this training is identical to that of the parent program, including eligibility, stipend, benefits, application procedures, and evaluations.

Background and Rationale. Public health ethics and the ethics of prevention are increasingly important concerns to scientists, health professionals, the public, and policymakers alike. Although linked to medical ethics and to bioethics, public health ethics has unique concerns that require careful consideration and scholarly research efforts.

Many excellent postdoctoral training programs in bioethics and medical ethics exist in the United States, but few focus primarily upon public health ethics. To our knowledge, no current program provides an opportunity to study ethical issues in cancer prevention research and in their application to public health and clinical preventive practice. Developing specialty training in the ethics of cancer prevention at the NCI is an important priority, filling a national need.

Brief Program Description. The program provides:

- Master's degree in public health (M.P.H.) at any one-year, accredited, university program
- NCI Summer Curriculum in Cancer Prevention
- Mentored research opportunities at the NCI, the NIH Department of Clinical Bioethics, the Office of Research Integrity at the U.S. Department of Health and Human Service, or at local universities (including, but not limited to, Georgetown University's Kennedy Institute

- of Ethics and Johns Hopkins University)
- Brief field experiences in public health ethics or the ethics of prevention at academic and other public and private institutions
- Additional coursework in bioethics, ethics, and philosophy, as needed
- Professional development and leadership training

Research Opportunities.

General categories of research topics include:

- Autonomy and the common (public) good
- Concepts and methods of moral decision making
- Concepts of cause and prevention
- Confidentiality and privacy



"The CPFP has provided an ideal opportunity to combine my background in health care ethics with further education and training in public health and to apply that knowledge to ethical questions in public health and cancer prevention and control. This is facilitated by extraordinary access to resources and key thinkers and researchers in these fields, including those at the NCI, NIH, and The Kennedy Institute of Ethics, as well as the opportunity to work with and be mentored by them."

Katherine Wasson, Ph.D., M.P.H., Fellow Alumna, M.D. Anderson Cancer Center

- Equipoise and the conduct of prevention trials
- Ethics of primary prevention and screening
- Genetic markers and the ethics of early detection
- IRBs and informed consent
- Issues of justice and health disparities
- Moral reasoning and ethical theory
- Professional ethics
- Research integrity and scientific misconduct
- Scientific evidence and the ethics of intervention
- The interface between science and society
- Uncertainty and scientific inference Specific research opportunities will be defined by the interests of individual fellows and those of available research preceptors.

CLOSELY LINKED TO MEDICAL ETHICS AND TO BIOETHICS, public health ethics has unique concerns that require scholarly research. Cancer prevention, connecting biomedical and social research with practical applications, is an ideal laboratory for ethical reflection.

IRELAND-NORTHERN IRELAND-NCI CANCER CONSORTIUM

The NCI has formed a multilateral partnership with Ireland and Northern Ireland to promote cooperation in all aspects of cancer research, treatment, and prevention. As part of this Ireland-Northern Ireland-NCI Cancer Consortium, the CPFP is now open to applicants from Ireland and Northern Ireland. It is intended that individuals applying through the Consortium will pursue careers in cancer prevention in Ireland or Northern Ireland upon completion of the fellowship.

The program provides M.P.H. training in Ireland or Northern Ireland, (year 1) the Summer Curriculum in Cancer Prevention, and mentored research at the NCI (years 2-4). If the applicant already possesses an M.P.H. degree and a primary degree in a health-related discipline or a Ph.D. in epidemiology or biostatistics, the fellowship will typically begin directly at the NCI (years 1-3).

To be eligible to apply through the Consortium, the applicant must:

- Possess a doctoral degree (M.D., Ph.D., J.D., or equivalent) or expect to complete the degree requirements by the start date of the fellowship. Assurance that all requirements will be completed must be supplied in writing by the chair of the dissertation committee (e.g., Ph.D. candidates) or dean of the school (e.g., M.D. candidates).
- · Be an Irish citizen of the Republic of Ireland, UK citizen of Northern Ireland, or a citizen of the European Union (EU) currently employed on the island of Ireland. Proof of citizenship (birth certificate or passport) and proof of employment in Ireland or Northern Ireland is required.
- For Northern Ireland applicants: Be employed by the Health and Social Care Northern Ireland (HSC); by voluntary, not-for-profit organizations in Northern Ireland involved in health or social care provision; by Queens University, Belfast or by University of Ulster. Applicants must be eligible to acquire a J-1

visa from the relevant U.S. Embassy or Consulate. It is the responsibility of the applicant to ensure that he/she will, in principle, satisfy the visa

requirements before submitting an application.

The Consortium will provide funds to attend an interview at NCI, if invited; M.P.H. training in Ireland/Northern Ireland; stipend; move to the U.S. and return: health insurance; and one scientific meeting per year while at NCI.

Prior to applying to the CPFP through the Consortium, applicants must contact the Health Research Board or HSC Research & Development Office (refer to Consortium Contact Information) below) to ensure that eligibility criteria are satisfied. Applicants should allow sufficient time to obtain approval through the Consortium prior to the September 1, 2008 application deadline.

Consortium Contact Information

Health Research Board

Sallyann O' Brien, PhD **Project Officer**

Research Infrastructure and Special Initiatives Unit

Health Research Board An Bord Taighde Sláinte 73 Lower Baggot Street

Dublin 2, Ireland

Phone: 353 1 2345 211 Fax: 353 1 613 0179 Email: saobrien@hrb.ie

HSC Research & Development Office

Dr. Nicola Armstrong Programme Manager 12-22 Linenhall Street

Belfast BT2 8BS, Northern Ireland

Phone: 44-28-90553617 Fax: 44-28-90553674

E-mail: nicola.armstrong@rdo.n-i.nhs.uk

Master in Clinical Investigation

Fellows pursuing clinical cancer prevention research or participating in the NCI-FDA joint training in cancer prevention may elect to obtain a master's degree in clinical investigation (M.S.) or public health (M.P.H.).

Once accepted into the CPFP, each fellow is responsible for arranging admission to an accredited university offering a master's program that can be completed in 12 months or less. The NCI will pay the tuition, fees, book allowance, and fellow's stipend during this year. It is expected that all master's degree requirements will be completed by the start of the NCI Summer Curriculum in Cancer Prevention.

Fellows pursuing a master's degree are required to remain in the CPFP for a period twice the length of time of the master's training or to reimburse the government the cost of the training and expenses. For example, attending a 12-month M.S. program requires a 24-month payback.

Listed below are some of the accredited institutions currently offering a one-year master's program in clinical investigation, the degree offered, and the application due date. Individuals wishing to attend an institution not listed below should contact the CPFP staff prior to application to the master's degree program. It is the responsibility of each fellow to ensure that the master's degree training can be completed within the one-year time frame.

Boston University School of Medicine

M.A. in Clinical Investigation (April 15)

Columbia University School of Public Health

M.S. in Biostatistics: Clinical Research Methods Track (February 1)

Duke University Medical Center

M.H.S. in Clinical Research (March 1)

Harvard School of Public Health

M.P.H. in Clinical Effectiveness (February 1)

NIH Warren G. Magnuson Clinical Center/ **Duke University Medical Center**

M.H.S in Clinical Research (March 1)

Stanford University Clinical Research Training Program

M.S. in Clinical Epidemiology (January 15)

The Johns Hopkins Schools of Medicine and Public Health

M.H.S. in Clinical Investigation (April 1)

University of Alabama at Birmingham

M.S.P.H. in Clinical Studies (April 1)

University of Minnesota School of Public Health

M.S. in Clinical Research (January 15, priority; June 15, final)

University of Virginia Graduate School of Arts and Sciences

M.S. in Health Evaluation Sciences: Clinical Investigation Track (March 1)



Left to Right: Barbara Dunn, Ph.D., M.D., Peter Greenwald, M.D., Dr.P.H., Leslie Ford, M.D., Barnett Kramer, M.D., Jackie Lavigne, Ph.D., M.P.H.

NCI Summer Curriculum in Cancer Prevention

Principles and Practice of Cancer Prevention and Control Course. This four-week summer course provides specialized instruction in the principles and practice of cancer prevention and control. It focuses on concepts, methods, issues, and applications related to this field. Participants will gain a broad-based perspective in terms of available resources, scientific data, and quantitative and qualitative methods. The course is divided into the following modules:

- Introduction to the Cancer Problem
- Cancer Prevention: An International Perspective
- Application of Cancer Prevention Methods
- Diet and Cancer Prevention
- Behavioral Science and Community Interventions
- Ethics, Law, and Policy in Cancer Prevention and Control
- Epidemiology, Prevention, and Control of Site-Specific Tumors
- Annual Advances in Cancer Prevention
- Health Disparities and Cancer Prevention in Diverse Populations
- Occupational Cancer
- Disseminating Scientific Knowledge

Molecular Prevention Course. This one-week course on molecular aspects of cancer prevention follows the Principles and Practice of Cancer Prevention and Control course. It provides a strong background in the molecular biology and genetics of cancer and an overview of basic laboratory approaches applied to cutting-edge research in the fields of molecular epidemiology, chemoprevention, biomarkers, and translational research. The following topics will be presented:

- An Overview of Carcinogenesis
- Oncogenes, Tumor Suppressor Genes, and Other Cancer-Related Genes
- Animal Models for Cancer Prevention Studies
- Methylation as a Target for Chemoprevention
- Xenobiotic Metabolism and Cancer Susceptibility
- Hormonal Carcinogenesis
- The Immune System as a Target for Vaccine and Prevention Approaches
- Cancer from a Biosystem Perspective
- The Role of Inflammation in Cancer
- New Approaches to Imaging Cancer Processes
- Application of Genomics and Proteomics to Cancer Prevention Research
- Microarray Approaches in Cancer Prevention
- Molecular Epidemiology: The Integration of Molecular Markers into Population Studies

Annual Advances in Cancer Prevention Lecture.

A special keynote lecture became part of the NCI Summer Curriculum in Cancer Prevention in 2000. This year's lecture will be held on July 23, 2008, at Lister Hill Auditorium, National Library of Medicine, Bethesda, Maryland. The keynote speaker will be announced on our website.



In 2007, Barnett S. Kramer, M.D., MPH, Associate Director for Disease Prevention and Director of the Office of Medical Applications of Research in the Office of Disease Prevention, Office of the Director, National Institutes of

Health in Bethesda, MD, presented "Cancer Prevention: Distinguishing Strength of Evidence from Strength of Opinion"



In 2006, Frank L. Meyskens, Jr., M.D. Professor of Medicine and Biological Chemistry, Director, Chao Family Comprehensive Cancer Center, Senior Associate Dean of Health Sciences, University of California, Irvine, presented

"The Promises and Perils of Clinical Chemoprevention: 1980-2030".



In 2005, John Potter, M.B.B.S., Ph.D., Senior Vice President and Division Director, Fred Hutchinson Cancer Research Center, Seattle, Washington, presented "What We Know and Don't Know About Colorectal Neoplasia."



In 2004, Waun Ki Hong, M.D., American Cancer Society Professor, Samsung Distinguished University Chair in Cancer Medicine at the University of Texas M. D. Anderson Cancer Center Houston, Texas, presented "Convergence of

Molecular Targets for Cancer Prevention and Therapy."



In 2003, Elio Riboli, M.D., Sc.M., M.P.H., Chief, Unit of Nutrition and Cancer at the International Agency for Research on Cancer, Lyon, France, presented "Cancer Prevention: A European Perspective."



In 2002, Leslie Bernstein, Ph.D., AFLAC, Inc., Chair in Cancer Research, Professor, Preventive Medicine, and Senior Associate Dean, Faculty Affairs at Keck School of Medicine, University of Southern California, Los Angeles,

California, presented "Cancer Prevention: Opportunities for Action."



In 2001, Frederick P. Li, M.D., Chief, Cancer Control Program, Division of Cancer Epidemiology and Control, Adult Oncology Department at Dana-Farber/Harvard Cancer Center, Boston, Massachusetts, presented "The

Identification and Care of Those at Highest Risk of Cancer."



In 2000, Bernard Levin, M.D., Professor of Medicine at the University of Texas M. D. Anderson Cancer Center, Houston, Texas, presented "Cancer Prevention: What is the Future?"

The Faculty. NCI Summer Curriculum in Cancer Prevention faculty consists of approximately 85 leading scientists at NCI, NIH, other government agencies, academia, cancer centers, and public and private organizations throughout the United States. The faculty is listed on our website http://cancer. gov/prevention/pob. The courses are designed to provide an interactive training experience to allow participants to develop a thorough knowledge of the activities in cancer prevention and control.

Eligibility. Both courses are open to physicians, scientists, and other health care professionals who have an interest in cancer prevention and control. Acceptance into the CPFP is not necessary for participation in either course. Individuals from cancer centers, universities, health departments, industry, U.S. Federal Government, and from across the United States and around the world have previously attended.

Recommended prerequisite courses are epidemiology, biostatistics, and cancer biology. Preference is given to individuals with a doctoral degree and/or relevant experience in cancer prevention and control. There is no cost to register for or to participate in either course. Room, board, and transportation expenses are the responsibility of the participant. The NCI Office of International Affairs (OIA) has a limited amount of funding available for individuals from developing countries. International participants interested in financial support should contact the OIA by February 15.

Dates/Times/Location. The Principles and Practice of Cancer Prevention and Control Course is four weeks long and usually offered from July through early August. The Molecular Prevention Course is a one week course usually offered in August.

Both courses are held at 6001 Executive Boulevard, Rockville, Maryland. Lectures are scheduled Monday through Friday, 8:30 a.m.-2:30 p.m. (occasionally lecture times will vary).

Registration. Registration opens in January and is required due to space limitations. Preference is given to individuals with a doctoral degree and/ or relevant experience in cancer prevention and control. To register, please e-mail, fax, or mail your request to the Program Coordinator (refer to Contact Information below). The following information is required:

- Curriculum vitae (include complete work address, telephone, fax, and e-mail)
- Letter of nomination from the director of your institute or department on official letterhead
- Course title (e.g., Principles and Practice of Cancer Prevention course, Molecular Prevention course, or both courses)

Registrants will be notified of their status after all materials have been received and reviewed.



Molecular Prevention Course Participants 2007

Additional Requirements for International Participants Applying for Funding.

Please send the following in addition to the 3 documents requested above:

- Copy of doctoral degree, and/or DrPH and MPH degrees (in original language with English translation, if necessary)
- Letter stating your proficiency in written and spoken English

Limited funding for living expenses may be available for applicants from low, middle, and upper-middle income countries, or institutions in resource poor settings, who register for both courses (The Principles and Practice of Cancer Prevention and Control Course and the Molecular Prevention Course), or just the 4-week course (The Principles and Practices of Cancer Prevention and Control Course). Funding will not be provided for the 1-week Molecular Prevention Course alone.

Registration will close on February 15 for International participants. This is to allow ample time for visa processing and other logistical requirements. Applicants will be notified on their funding level by the Director, Office of International Affairs, NCI.

Contact Information:

Program Coordinator NCI Summer Curriculum in Cancer Prevention

6120 Executive Boulevard (EPS)

Suite T-41, MSC 7361 Bethesda, MD 20892-7361 Phone: (301) 496-8640

Fax: (301) 480-2669

E-mail: cfpcoordinator@mail.nih.gov For further information, please visit our website http://cancer.gov/prevention/pob

If you are a person with a disability and require any assistive device, services, or other reasonable accommodation to participate in these activities, please contact the Office of Preventive Oncology at (301) 496-8640 at least one week in advance of the lecture date to discuss your needs.

Other Program Components

MOLECULAR PREVENTION LABORATORY COURSE

Along with participation in the Summer Curriculum in Cancer Prevention, all fellows at the NCI take part in the Molecular Prevention Laboratory course, a hands-on laboratory experience that is open only to Cancer Prevention Fellows. The course provides fellows, especially those with limited laboratory experience, tangible reference points for understanding laboratory applications commonly used in cancer prevention research. The course consists of brief explanatory lectures interwoven with laboratory demonstrations. Each exercise is designed to provide instruction in laboratory techniques that are frequently referenced in the Summer Curriculum in Cancer Prevention lectures.

ANNUAL CANCER PREVENTION FELLOWS' SCIENTIFIC SYMPOSIUM

In September 2002, the CPFP held its First Annual Cancer Prevention Fellows' Scientific Symposium. This inaugural event set the stage for the subsequent yearly symposia held each fall just prior to the start of the Cancer Prevention and Control Colloquia Series. The Symposium is an occasion to bring together the senior fellows,

those fellows who have recently arrived at the NCI, and the CPFP staff for a day of scientific exchange in the area of cancer prevention. The event provides an opportunity for fellows to discuss their projects, ideas, and potential future collaborations. Fellows spearhead the planning of the Symposium, including the development of the program agenda and special workshops and the selection of invited speakers.

FELLOWS' RESEARCH MEETINGS

Between September and June, Cancer Prevention Fellows and CPFP scientific staff attend the weekly Fellows' Research Meeting, where fellows formally present their research. Fellows' preceptors and invited guests are welcome to attend. Periodically, career and professional development topics are also presented.

CANCER PREVENTION AND CONTROL COLLOQUIA SERIES

Following the Fellows' Research Meeting, fellows attend the Cancer Prevention and Control Colloquia Series. These seminars feature leading scientists in the field of cancer prevention and control. Each fellow has the opportunity to invite prominent investigators in his/her discipline to present at these NCI-sponsored lectures.



Molecular Prevention Laboratory Course Left to Right: Salma Shariff-Marco, M.P.H., Ph.D., Adeyinka Laiyemo, M.B.B.S., M.P.H., Roycelynn Mentor-Marcel, Ph.D., M.P.H., Lesley Anderson, Ph.D., M.P.H.

GRANTS AND GRANTSMANSHIP WORKSHOP

The CPFP provides formal training in grantsmanship, beginning with a week-long Grants and Grantsmanship Workshop offered each year.



"I'm amazed with the research opportunities offered by the CPFP at NCI. The resources and support services are phenomenal and the experts are often just down the hall. It's even possible to apply for grants outside of NCI as a Principal Investigator, a truly unique perk of this training program."

> Beth Dixon, Ph.D., M.P.H., Fellow Alumna, New York University

In addition to providing didactic and practical experiences in the grants process, a major goal of the workshop is to facilitate successful applications for research funds for all interested fellows. This training is designed to prepare each fellow for a critical next step in his or her career in which demonstrated ability to develop and organize ideas into a well-written proposal will be a major determinant in hiring and promotion decisions. Since the Grants and Grantsmanship Workshop was first offered in January 2000, CPFP fellows have successfully competed for peer-reviewed grants, including NCI

Intramural Research Awards, Department of Defense Breast Cancer Research Program grants, private foundation grants, and NCI K07 and K22 Career Development Awards.

LEADERSHIP AND PROFESSIONAL **DEVELOPMENT TRAINING**

The foundation for success in the field of cancer prevention is based on leadership skills, professional excellence, and mastery of one's scientific discipline. Within the CPFP, our goal is to help fellows maximize their individual potential for leadership and scientific contribution to the field of cancer prevention through a series of professional development activities. These activities are designed to prepare individuals for the transition from postdoctoral fellows to successful, independent scientists and professionals in cancer prevention.

We have organized the professional development activities to address the needs of fellows at the beginning, the middle, and the end of the fellowship. At the beginning, once fellows have completed their master's program, activities focus on identifying the best research experiences and on learning successful approaches to securing such opportunities. Other activities include designing a personal plan for productivity and time management. For those who are mid-way through the fellowship, activities focus on methods to enrich their training experience further, through learning how to design a long-term independent research agenda and by developing "professional polish." To help those approaching the end of the program, activities prepare fellows for attaining their first position in the field of cancer prevention. Fellows learn where to find jobs in cancer prevention and control and how to prepare applications for such positions.

To meet the individual needs of fellows, professional development activities consist of structured workshops, seminars, and personal meetings, including:

- Interviewing and Negotiating
- Networking and Effective Communication
- Presentation Skills Workshop
- Scientific Writing
- · Setting Goals, Planning Priorities, and Managing Time

In addition, new activities are being developed to further expand the portfolio of professional development training.

ADDITIONAL TRAINING

Fellows may also participate in academic courses in subject areas relevant to cancer prevention and control. These courses are typically offered by schools of public health, departments of preventive medicine and epidemiology, the federal government, and other organizations. Such training will be considered in cases where regulations permit and where the learning experience is expected to significantly enhance the trainee's research capabilities.

FIELD EXPERIENCES

Fellows may choose to pursue field experiences at institutions outside the NIH that are currently engaged in cancer prevention research, cancer surveillance, cancer control applications, or other related activities. These experiences, usually at local institutions, are typically brief and require prior approval by the CPFP.

Program Information

Eligibility

To be considered for the CPFP, you must meet the following eligibility requirements:



"The fellowship offers a unique opportunity to integrate social and lab-based sciences with population based approaches. The public health training provided by CPFP has allowed me to enhance and broaden my research in psycho-oncology and physical activity. The opportunities for collaboration have also been phenomenal. I have seen no other post-doctoral position that equals the CPFP in terms of training, access to outstanding mentorship and research opportunities, as well as important levels of independence and autonomy."

Ashlev Wilder Smith, Ph.D., M.P.H., Fellow Alumna, Division of Cancer Control and Population Studies, NCI

DOCTORAL DEGREE

You must possess an M.D., Ph.D., J.D., or other doctoral degree in a related discipline (e.g., epidemiology, biostatistics, ethics, philosophy, or the biomedical, nutritional, public health, social, or behavioral sciences). Foreign education must be comparable to that received in the United States.

Applicants currently enrolled in accredited doctoral degree programs that have not yet fulfilled all degree requirements will be considered for entry into the program, with the understanding that all requirements will be completed before the start of the CPFP. Assurance to this effect must be supplied in writing by the chair of the dissertation committee (e.g., Ph.D. candidates) or the dean of the school (e.g., M.D. candidates).

Applicants must have less than five years of relevant postdoctoral training at the time of appointment.

CITIZENSHIP

You must be a citizen or permanent resident of the United States at the time of application (September 1). The I-551 stamp in a passport is acceptable; "Employment Authorization" documents are not acceptable.

Applicants applying through the Ireland-Northern Ireland-NCI Cancer Consortium should refer to the Program Description/New Initiatives section for guidelines.

Stipends and Benefits

Stipends. Each stipend will be determined by the individual's degree and years of relevant postdoctoral experience. Fellows will receive between \$44,300 and \$59,500. Annual increases may be given. Specialty competitive allowances are given for degrees in epidemiology or biostatistics, for J.D.s or M.D./Ph.D.s, and for board-certified M.D.s engaged in patient care. Stipends are subject to change, depending on federal guidelines.

Health Insurance and Leave. Fellows will receive individual or family health insurance and paid federal holidays, annual leave, sick leave. and family leave.

Travel and Relocation. The NCI may cover the cost of relocation expenses up to a maximum of \$3,000 (i.e., travel, shipment of household goods, and temporary storage, if necessary) for the fellow and his/her dependents for one move to the area where M.P.H. training will be pursued or to the Rockville, Maryland area. Reimbursement will be in accordance with prevailing government regulations. No return travel is authorized.

Expenses are provided for travel to meetings and training each year for each fellow, excluding the MPH training year.

Selection and Interview

All complete applications submitted by eligible candidates by the application deadline will be reviewed by members of the CPFP Scientific Education Committee. This Committee is comprised of scientists from different divisions within the NCI, the FDA, and an ad hoc member from outside the NCI with expertise in the field of cancer prevention and control. Those applicants judged to be highly qualified will be notified in October 2008 and will be invited for a one-day interview. The interviews will be held on October 22, 23, or 24, 2008, in Rockville, Maryland. Applicants will be notified of their status shortly thereafter.

Start and Duration of **Appointment**

Start of Appointment. For individuals entering the CPFP directly (i.e., not pursuing M.P.H./M.S. training), the start date is June 22, 2009. For individuals obtaining an M.P.H./M.S. degree during the first year, the appointment begins with the start of the master's program. All fellows entering the program are expected to attend the CPFP Orientation in Rockville, Maryland, which is held during the last week of June.

Duration of Appointment. The initial appointment will be for 1 year and may be renewed on a yearly basis. The typical duration is 4 years (year 1: master's degree; years 2 through 4: NCI Summer Curriculum in Cancer Prevention and mentored research). If a master's degree is obtained during the first year of the program, the fellow is required to remain in the CPFP for a period twice the duration of the master's training period. All renewals are contingent upon total duration of stay at the NIH, which cannot exceed 5 years for a non-tenured appointment nor exceed 8 years for any type of doctoral-level position.

Guidelines for Application

Application Materials

The following application materials are required, as described below:

Personal Statement of Research Goals. In narrative form, describe your research interests and goals and how these relate to the field of cancer prevention and control. Please also provide insight into your short- and long-term career goals, and explain how the CPFP will help you in achieving those goals. Limit your personal statement to two typed, single-spaced pages and use 12-point font and 1" margins (approximately 1.000 words).

Curriculum Vitae. Please refer to *Information* to Include in Curriculum Vitae in this section.

Letters of Reference. Four current and original letters of reference must be sent directly to the director of the CPFP by individuals in the scientific/academic community who have knowledge of your scientific accomplishments, motivation, and skills. Letters should be addressed to the Acting Director, Dr. Jonathan S. Wiest; typewritten on official letterhead; written in English; and contain an original signature. A faxed copy is acceptable provided that the original letter is sent by mail and postmarked on or before September 1, 2008. Photocopies and electronic copies are not acceptable.

Academic Transcripts. Copies of all graduate and undergraduate transcripts (and/or translations, if applicable) must be submitted directly to the Acting Director of the CPFP, Dr. Jonathan S. Wiest.

Other Documentation. Permanent residents of the United States must submit proof of eligibility for citizenship. The I-551 stamp in a passport is acceptable; "Employment Authorization" documents are not acceptable.

Individuals applying through the Ireland-Northern Ireland-NCI Cancer Consortium must submit proof of citizenship (birth certificate or passport) and proof of employment (refer to *Ireland-Northern* Ireland-NCI Cancer Consortium section).

Information to Include in Curriculum Vitae

- Applicants are encouraged to use their current curriculum vitae and to add any necessary information.
- Please include your name and a page number on each page of the curriculum vitae.
- Some of the information requested below will not be applicable to all individuals.
- Please do not print or type your information on this page.

Date Prepared

Personal Information

- Name (First middle last)
- Gender (optional)
- Race (optional)
- Date of birth
- Place of birth (city, state, country)
- Home address

- Work/school address
- •Telephone (if more than one telephone number is provided, please indicate preferred contact)
- Fax
- E-mail (if more than one e-mail address is provided, please indicate preferred contact)

Citizenship

- Country of citizenship
- U.S. permanent resident number, if applicable
- Individuals applying through the Ireland-Northern Ireland-NCI Cancer Consortium: Please indicate citizenship, country where currently employed, and application tracking number (refer to catalog or website for details)

Education Please list all colleges and universities attended and any other relevant training. Include the following information for each institution:

- · School, department, city and state, country
- Dates attended, academic major, degree, year degree awarded/expected

Work Experience Please list current and past employment. Include the following information for each position:

- •Title, employer's name, address, and telephone
- · Dates of employment, hours per week
- Brief description of duties and accomplishments

Other Information Please note that the items requested below may not be relevant to all applicants.

- Board certification
- Committees
- Grants awarded
- Honors and awards
- Patents

- Peer-review service
- Professional licenses
- Professional society memberships
- Scientific presentations
- Teaching

Research Interests Please provide a few key words that describe your research interests.

Bibliography Please list all publications and indicate whether they are "published," "in press," submitted," or "in preparation." Please list full-length manuscripts and abstracts separately."

How to Submit Application **Materials**

If you are interested in applying to the CPFP and meet the eligibility requirements (refer to Eligibility section), you may submit your application either:

- Online, through our website http://cancer.gov/prevention/pob
- Via postal mail

Please select only one method by which to submit your application. If more than one application is received for an applicant, only the first application received will be considered.

APPLYING ONLINE

Personal Statement of Research Goals and Curriculum Vitae. Please access the CPFP application on our website http://cancer.gov/ prevention/pob and link to the Application page. You will be asked to create a personal account that only you can access through a unique user name and password. You will then be requested to provide some general information and to upload your personal statement of research goals and curriculum vitae. Information entered online can be saved as the application is completed and edited up until you submit the application. The application must be submitted on or before September 1, 2007.

Letters of Reference, Academic Transcripts, and Other Documentation. Four letters of reference, academic transcripts, and other documentation materials should be sent directly to the director of the CPFP via postal mail (refer to Contact Information below). All application materials must be postmarked on or before September 1, 2008.

> **Application Deadline** September 1, 2008

APPLYING VIA POSTAL MAIL

Personal Statement of Research Goals and Curriculum Vitae. The personal statement of research goals and curriculum vitae should be submitted together to the director of the CPFP (refer to Contact Information below).

Letters of Reference, Academic Transcripts, and Other Documentation. Four letters of reference, academic transcripts, and other documentation materials should be sent directly to the director of the CPFP via postal mail (refer to Contact Information below). All application materials must be postmarked on or before September 1, 2008.

Contact Information

Send application materials to:

CPFP Coordinator

Cancer Prevention Fellowship Program

National Cancer Institute

6120 Executive Boulevard (EPS)

Suite T-41, MSC 7361

Bethesda, MD 20892-7361

For Overnight Delivery:

6120 Executive Boulevard, Suite T41

Rockville, MD 20852

Direct further inquiries to:

Program Coordinator

Telephone (301) 496-8640 Fax (301) 402-4863

E-mail cpfpcoordinator@mail.nih.gov

http://cancer.gov/prevention/pob

Selection for these positions will be based solely on merit, with no discrimination for non-merit reasons, such as race, color, gender, national origin, age, religion, sexual orientation, or physical or mental disability. NIH provides reasonable accommodations to applicants with disabilities. If you need reasonable accommodation during any part of the application and hiring process, please notify us. The decision on granting reasonable accommodation will be handled on a case-by-case basis.

THE NIH/NCLIS AN EQUAL OPPORTUNITY EMPLOYER

Preceptorships



"While doing graduate work in philosophy, I became interested in how public health officials and policy makers handle scientific uncertainty when making evidence-based decisions. The CPFP's ethics track provided me with the ideal training environment to apply my dual background in philosophy and public health to practical problems in cancer prevention."

> Mark Parascandola, Ph.D., M.P.H., Fellow Alumnus, Division of Cancer Control and Population Sciences, NCI

The major activity for Cancer Prevention Fellows is mentored research, traditionally involving one or more of the following areas: laboratory-based cancer prevention research, epidemiologic research (including molecular epidemiologic studies and prevention trials), behavioral science research, clinical prevention research, prevention-related policy research, ethics of prevention and public health research, and quantitative or qualitative methodologies in cancer prevention and control research. All fellows are expected to develop original scientific projects and to report their findings at scientific meetings and in leading journals. Preceptors who serve to guide and enrich each fellow's experience are selected from skilled investigators across all NCI divisions, participating FDA centers, or local academic institutions. To date, nearly one hundred NCI staff members have served as preceptors.

AN EXPANDED LISTING OF PRECEPTORS and their areas of expertise are published on our website http://cancer.gov/prevention/pob.

Preceptorships are selected through a matching process. During their first summer onsite at NCI, fellows spend time meeting with potential preceptors. A mutual agreement is reached between the preceptor and the fellow on the research that will be completed during the fellowship. A research proposal for the initial project is then prepared for approval by the preceptor and the CPFP scientific staff. Whereas the CPFP has all administrative responsibility for each fellow, the preceptor provides scientific supervision. Preceptors are responsible for arranging for office space, supplies, and equipment; encouraging presentations and publications at local and national meetings; and providing supplemental travel funds for researchrelated activities.

Listed below are some of the NCI divisions, programs, laboratories, branches, and offices from which Cancer Prevention Fellows may select their preceptors. A listing of preceptors from the FDA is available on the website. http://iotftraining.nci. nih.gov/prevent.html—NCI-FDA Joint Training in Cancer Prevention.



"The CPFP allowed me to explore diverse interests and work closely with many of the great minds in epidemiology and biostatistics, an opportunity that I would not have had in a traditional postdoctoral position."

Pam Marcus. Ph.D.. Fellow Alumna, Division of Cancer Prevention, NCI

Division of Cancer Prevention

The Division of Cancer Prevention (DCP)'s mission is to plan, direct, implement, and monitor cancer research and training that is focused on early detection, cancer risk, chemoprevention, and supportive care. DCP projects address the need to identify where a person is in the process of carcinogenesis, and to determine ways to actively intervene to stop it from becoming invasive cancer. Varied approaches are supported, from pre-clinical discovery and development of biomarkers and chemoprevention agents, including pharmaceuticals and micronutrients, to Phase III clinical testing. Programs are harmonized with other NCI divisions. NIH institutes, and federal and state agencies. Additional information can be found at http://prevention.cancer.gov.

FOUNDATIONS OF PREVENTION **RESEARCH GROUPS**

The Basic Prevention Sciences Research **Group**, in collaboration with trans-NCI programs dedicated to systems biology research, is developing systems approaches to cancer prevention in areas such as drug development and carcinogenesis modeling. The focus is to integrate fundamental research of NCI intramural and extramural research divisions with that of the Division of Cancer Prevention.

Acting Chief: John Gohagan, Ph.D.

The **Biometry Research Group** engages in independent and cooperative research studies on cancer epidemiology, prevention, screening, and diagnosis using methods of mathematical and analytic statistics and conducts independent and collaborative studies in biostatistical and epidemiologic methodology and in mathematical modeling of processes relevant to cancer prevention activities.

Chief: Philip C. Prorok, Ph.D.

The Cancer Biomarkers Research Group promotes and supports research to identify, develop, and validate biological markers for earlier cancer detection and risk assessment. The group integrates basic and clinical science studies along with computational, statistical and epidemiologic approaches for a comprehensive understanding of biomarkers. It coordinates the Early Detection Research Network.

Chief: Sudhir Srivastava, Ph.D., M.P.H.

The **Chemopreventive Agent Development** Research Group conducts research to identify and develop agents to prevent, reverse, or delay early, preinvasive cancer. Activities include preclinical efficacy and safety testing; development of animal models; development of markers for agent mechanisms of action and effects in carcinogenesis; clinical Phase 1 safety, pharmacokinetic, and dose ranging studies; and preparation of Investigational New Drug applications to the FDA.

Chief: James A. Crowell, Ph.D.



Worta McCaskill-Stevens. M.D., M.S., Preceptor, Community Oncology and Prevention Trials Research Group, Division of Cancer Prevention, NCI

The **Community Oncology and Prevention Trials Research Group**

invests community physicians in clinical trials, via the Community Clinical Oncology Program, and is involved in all aspects of the design and implementation of NCI's large cancer prevention clinical trials. The group also reviews and approves all Cooperative Group cancer control and prevention clinical trials.

Chief: Lori M. Minasian, M.D., F.A.C.P.

The Early Detection Research Group identifies and ascertains the effectiveness of both the operating characteristics and the impacts on mortality, and immediate and downstream risks of molecular and imaging cancer detection technologies and practices. It systematically assesses the value of cancer screening and early detection tests and technologies by establishing their ability to reduce cancer mortality.

Chief: Christine D. Berg, M.D.

plans, develops, directs, and coordinates external research programs in diet and nutrition, including micronutrients as modifiers of cancer risk and tumor behavior, to help establish a comprehensive understanding of the precise role of bioactive food components. Projects focus on determining how specific genes and/or molecular targets are influenced by either essential or non-essential

nutrients. Research is aimed at identifying people

who will benefit and people who might be placed

The Nutritional Science Research Group

at risk from dietary intervention strategies. Chief: John A. Milner, Ph.D.

ORGAN SYSTEMS RESEARCH GROUPS

The efforts of the **Breast and Gynecologic** Cancer Organ System Research Group are specifically directed at reducing the incidence, morbidity, and mortality of breast and gynecologic cancers, particularly through planning, supporting, and conducting research and clinical trials that develop interventions for risk assessment, screening, early detection, and prevention of breast and gynecologic cancers.

Chief: Karen A. Johnson, M.D., Ph.D., M.P.H.

The primary mission of the **Gastrointestinal** and Other Cancer Research Group is to improve the public's health by preventing gastrointestinal, dermatologic, endocrine, hematolymphoid, and treatment-induced malignancies. Staff collaborate with the public, academia, industry, and regulatory agencies to better identify persons at risk for cancer and to develop novel interventions that reverse or retard carcinogenesis. The group investigates mechanisms of promising investigational agents and delivery systems that target preneoplasia.

Acting Chief: Asad Umar, D.V.M., Ph.D.



Eva Szabo, M.D., Preceptor, Lung and Upper Aerodigestive Cancer Research Group, Division of Cancer Prevention, NCI

The **Lung and Upper Aerodigestive Cancer Research Group** promotes and supports research targeting the early detection and prevention of cancer arising within the lung and upper aerodigestive tract. Collaborative research is conducted with extramural and intramural NCI staff, with emphasis on Phase Il clinical trials of novel chemopreventive agents in individuals at high

risk for cancers of these sites. Optimization of trial design, identification/validation of surrogate endpoint biomarkers, and integration of new imaging modalities into chemoprevention trials are ongoing research priorities.

Chief: Eva Szabo, M.D.

The Prostate and Urologic Cancer Research

Group promotes and supports extramural basic and applied research that focuses on the prevention of prostate and urologic cancers. The group plans, develops, implements, and monitors chemoprevention clinical trials that employ pharmacologic, biologic, genetic, immunologic, and vaccine interventions. The overall goal is to evaluate and validate new technologies that identify premalignant lesions and to develop novel chemopreventive agents to reduce cancer incidence.

Chief: Howard Parnes, M.D.

Division of Cancer Control and **Population Sciences**

The Division of Cancer Control and Population Sciences (DCCPS) aims to reduce the risk, incidence, and death from cancer, as well as enhance the quality of life for cancer survivors. It conducts and supports an integrated program of the highest quality in cancer genetic, epidemiologic, behavioral, social, and surveillance research. The division's funded research aims to understand the causes and distribution of cancer in populations, to support the development and implementation of effective interventions, and to monitor and explain cancer trends in all segments of the population. Further information can be found at http://dccps.nci.nih.gov.

Director: Robert Croyle, Ph.D.

OFFICE OF THE DIRECTOR

The mission of the **Research Dissemination** and Diffusion team is to reduce cancer incidence, morbidity, and mortality through promoting adoption, reach, and impact of evidence-based interventions across the cancer control continuum from primary prevention to end of life care. It seeks to bring together resources to stimulate and support both dissemination and diffusion research and the dissemination and diffusion of cancer control research, and to close the gap between research discovery and program delivery by getting evidence-based information and interventions into use.

Deputy Director: Jon F. Kerner, Ph.D.



Julia Rowland, Ph.D. Preceptor, Office of Cancer Survivorship. Division of Cancer Control and Population Sciences, NCI

The mission of the Office of Cancer **Survivorship** is to enhance the quality of life and to improve the length of survival of all persons diagnosed with cancer and to minimize or stabilize adverse effects experienced during cancer survivorship. The office conducts and supports research that both examines and addresses the long- and short-term

physical, psychological, social, and economic effects of cancer and its treatment among pediatric and adult survivors of cancer and their families.

Director: Julia H. Rowland, Ph.D.

APPLIED RESEARCH PROGRAM

The Applied Research Program plans, conducts, and supports research related to



Rachel Ballard-Barbash, M.D., M.P.H., Preceptor, Applied Research Program, Division of Cancer Control and Population Sciences, NCI

evaluating patterns and trends in cancer-related risk factors, health behaviors, economics, outcomes, health services and patient-reported outcomes and to determine the influence of those factors at the individual, societal, and systems level on patterns and trends in measures of cancer burden, including incidence, morbidity, mortality, and survival.

Director: Rachel Ballard-Barbash, M.D., M.P.H.

The **Health Services**

and Economics Branch supports, conducts, and coordinates research on the dissemination of effective cancer-related health services into community practice and studies demographic, social, economic, and health system factors as they relate to providing preventive, screening, diagnostic, and treatment services for cancer. Research Program, The ultimate purpose of this research is to improve cancer outcomes, reduce cancer-



Stephen Taplin, M.D., M.P.H., Preceptor, Applied Division of Cancer Control and Population Sciences, NCI

related health disparities, and reduce the burden of cancer to patients, their families, and society.

Chief: Martin Brown, Ph.D.

The Outcomes Research Branch conducts, coordinates and sponsors research to measure, evaluate, and improve patient-centered outcomes of cancer care delivery across the cancer care continuum. The branch is particularly interested in morbidity and mortality outcomes, patient symptoms and health-related quality of life (HRQOL), patient experience of and satisfaction with health care, and social and economic consequences of cancer care.

Chief: Steven Clauser, Ph.D.

The Risk Factor Monitoring and Methods

Branch is responsible for monitoring cancer-related risk factors among the general U.S. population and among selected population subgroups defined by gender, age, race, and ethnicity; developing and improving the methods of assessing such risk factors; and providing data to assist in formulating public policies addressing these factors.

Chief: Susan Krebs-Smith, Ph.D.

BEHAVIORAL RESEARCH PROGRAM

The Behavioral Research Program initiates, supports, and evaluates a comprehensive program of research ranging from basic behavioral research to research on the development, testing, and dissemination of disease prevention and health promotion interventions in areas such as tobacco use, screening, dietary behavior, sun protection, and health communication.

Acting Director: Robert Croyle, Ph.D.

The **Applied Cancer Screening Research** Branch plans, implements, and maintains a comprehensive research program to develop effective strategies for promoting cancer-screening methods known to reduce cancer morbidity and mortality. The branch employs interdisciplinary teamwork and collaboration with appropriate organizations and constituencies to establish a national research agenda for cancer screening.

Acting Chief: Stephen Taplin, M.D., M.P.H.

The Basic and Biobehavioral Research **Branch** promotes, sponsors, and supports biobehavioral and basic (social, cultural, behavioral) research and training. This research attempts to identify the mechanisms, principles, and theoretical underpinnings of cancer-related behavior and behavior change across all ages, racial and ethnic groups, socioeconomic strata, and cancer diagnoses. The branch seeks to understand behavior and behavior change in its social, cultural and economic context, including how basic and biobehavioral research relates to cancer health disparities.

Chief: Paige Green McDonald, Ph.D., M.P.H.

The **Health** Communication and **Informatics Research** Branch plans, develops, and coordinates important new research on risk communication, health communications, and informatics relevant to cancer prevention and control. The branch coordinates research using both traditional means of communication as well as new digital interactive media and other new media to reach at-risk populations. It acquires



Bradford Hesse, Ph.D., Preceptor, Health Communications and Informatics Research Branch. Division of Cancer Control and Population Sciences, NCI

and disseminates health communication knowledge stimulates sophisticated training of health communication scholars, research professionals, and public health practitioners.

Chief: Bradford Hesse, Ph.D.

The **Health Promotion Research Branch** supports research on behavioral prevention, which includes diet, physical activity, energy balance, virus exposure, and sun exposure. It provides leadership in these areas by focusing research efforts on effective clinical, environmental, and community-based intervention strategies. It synthesizes and disseminates findings, recommendations, and priorities of successful strategies



Linda Nebeling, Ph.D., M.P.H., R.D., Preceptor, Health Promotion Research Branch, Division of Cancer Control and Population Sciences, NCI

in prevention behavioral change interventions to target organizations and individuals and solicits input from and communicates regularly with the extramural community to refine methodology and evaluate effectiveness.

Chief: Linda Nebeling, Ph.D., M.P.H., R.D.



"I realized that to do what I wanted in tobacco control research, I needed additional training, some protected time for research, and opportunities to meet people in my area of interest, I was provided with all three of these—and then some —at the NCI CPFP."

> Ted Marcy, M.D., M.P.H., Fellow Alumnus. University of Vermont

The **Tobacco Control Research Branch** was established to provide a focal point for tobacco control research within the division. The branch plans, develops, implements, and maintains a broad spectrum of basic and applied research in the behavioral, social, and population sciences on the prevention and cessation of tobacco use among both youth and adults. The mission is to reduce cancer incidence and mortality caused by tobacco use through a comprehensive research program.

Chief: Cathy Backinger, Ph.D., M.P.H. The Methods and Technologies Branch

plans, directs, and coordinates research related to epidemiologic methods to address research issues and translate technological approaches developed in the context of other research endeavors to the development of biomarkers of risk susceptibility and to cancer epidemiologic settings.

Chief: Mukesh Verma, Ph.D.

The Modifiable Risk Factors Branch plans, develops, and coordinates epidemiologic research in the etiology of cancer in human populations relating to factors that may be modifiable such as nutrition, physical activity and energy balance, infectious diseases, and physical and chemical agents.

Chief: Britt Reid, D.D.S, Ph.D.

The Host Susceptibility Factors Branch

plans, develops, and coordinates a comprehensive program of epidemiologic research in the etiology of cancer in human populations related to host (i.e., personal) susceptibility factors such as genetic, epigenetic, immunological and hormonal biological pathways, and social, cultural, and race/ ethnicity factors.

The Clinical and Translational Epidemiology

Acting Chief: Mukesh Varma, Ph.D.

EPIDEMIOLOGY AND GENETICS RESEARCH PROGRAM

The Epidemiology and Genetics Research Program manages a comprehensive program of grant-supported, population-based research to increase our understanding of cancer etiology and prevention. Its mission is to increase our understanding of the determinants of cancer and cancer-related outcomes in human populations by using an epidemiologic approach. The branch seeks to facilitate movement of discoveries in the basic sciences and improved technologies to studies in human populations, discoveries about the determinants of cancer and cancer-related health outcomes after cancer into clinical and public health practice, and the movement of scientific knowledge from clinical and public health to human studies and basic biology.

Acting Director: Deborah Winn, Ph.D.

Branch plans, develops, and coordinates a comprehensive program of epidemiologic research in human populations related to clinical factors that influence development of cancer among persons with underlying diseases and conditions and progression, recurrence, new primary cancers, and mortality from cancer among cancer survivors. This program includes research to study differences in cancer susceptibility and risk in individuals and populations and the multiple environmental and genetic factors that jointly contribute to development of cancer among persons with underlying diseases and conditions and progression, recurrence, new primary cancers, and mortality from cancer among cancer survivors with the ultimate goal of elucidating cancer development and progression

among people with these health conditions. Acting Chief: Deborah Winn, Ph.D.

SURVEILLANCE RESEARCH PROGRAM

The role of the Surveillance Research Program is to monitor emerging trends in our national cancer burden, track the impact of cancer on the U.S. population, and provide information that will enable researchers to generate hypotheses and address questions about observed changes over time. Research within the program is developing innovative methods for the analysis and understanding of cancer statistics and outcomes of cancer control research.

Director: Brenda Edwards, Ph.D.

The Cancer Statistics Branch conducts and supports research and developmental activities related to the surveillance of cancer patterns in the United States and monitoring progress against cancer. It provides the nation with reliable data collection systems and reliable descriptions of cancer data generated by those systems, principally the Surveillance, Epidemiology, and End Results (SEER) program of cancer registries, a population-based cancer surveillance system of almost 2 million cancer cases. The branch also manages a large portfolio of SEER Special Studies, investigations that extend the scientific usefulness of the core SEER dataset.

Chief: Dave Stinchcomb, M.A./M.S.C.S.

The **Statistical Research and Applications** Branch plans, conducts, and supports statistical research, modeling, collaboration, and consultation related to cancer surveillance and the cancer control missions of the National Cancer Institute. Research within the branch is targeted at improving and developing statistical methods and models for use in the analysis and presentation of population-based cancer statistics, as well as in the broader areas of cancer surveillance and cancer control research.

Chief: Eric J. (Rocky) Feuer, Ph.D.

Division of Cancer Epidemiology and Genetics

The Division of Cancer Epidemiology and Genetics (DCEG) is the primary focus within the NCI for population-based research to discover the genetic and environmental determinants of cancer and new approaches to cancer prevention. Intramural and collaborative interdisciplinary studies are conducted on the distribution, causes, and natural history of cancer, and the means for its prevention. Further information can be found at http://dceg.cancer.gov.

EPIDEMIOLOGY AND BIOSTATISTICS PROGRAM

The Epidemiology and Biostatistics Program conducts independent and collaborative epidemiologic and biostatistical investigations to identify the distribution, characteristics, and causes of cancer in human populations.

The **Biostatistics Branch** is responsible for (1) providing expert consultation and active collaboration on study design and analysis of epidemiologic studies; (2) developing statistical, computational, and other methods needed for conduct and analysis of epidemiologic studies; and (3) leading selected epidemiologic studies.

Chief: Nilanjan Chatterjee, Ph.D.

The Hormonal and Reproductive **Epidemiology Branch** conducts research aimed at identifying groups at high risk of cancer, clarifying the natural history of various cancers, understanding interactive effects of genetic and environmental factors on cancer risk, and elucidating biologic mechanisms of carcinogenesis. To define risk factors for hormonally related tumors, we assess reproduction and other factors, measure endogenous hormones, identify hormonal correlates of risk factors for these diseases, and investigate conditions associated with marked hormonal perturbations. A major area of research also focuses on defining the role of the human papillomaviruses in the etiology of genital tumors.

Chief: Louise A. Brinton, Ph.D.

To clarify the role of nutrition in the etiology of human cancer, the Nutritional Epidemiology **Branch** carries out a wide range of interdisciplinary investigations, including observational epidemiologic studies, experimental epidemiologic studies (clinical trials), and metabolic studies. The branch integrates biospecimen collection in its studies to explore the physiologic, cellular, and molecular processes linking nutrition and cancer. It emphasizes the 'exposure' side of nutrition research, with studies of dietary patterns, intake biomarkers, food composition databases, and dietary measurement error. 'Nutrition' is conceived broadly, comprising dietary factors, body size and body composition, and physical activity and energy balance.

Chief: Arthur Schatzkin, M.D., Dr.P.H.

The Occupational and Environmental **Epidemiology Branch** conducts studies to identify causes of cancer with a focus on occupational and environmental exposures. Interdisciplinary casecontrol, cohort, and transitional studies include quantitative exposure assessment and collection of biologic samples to identify and characterize risk factors and mechanisms of action.

Chief: Debra T. Silverman, Sc.D.

The mission of the Radiation Epidemiology **Branch** is to identify, quantify, and understand the risk of cancer in populations exposed to radiation, alone or in combination with other agents. Since models of the carcinogenic effects of radiation exposure are relevant to other exposures, the studies of radiogenic tumors contribute to overall understanding of the biologic basis of carcinogenesis.

Chief: Martha Linet, M.D., M.P.H.

The Infections and **Immunoepidemiology Branch** believes that health will be improved greatly through the discovery and understanding of infections associated with human cancers. The mission of the branch is to conduct research that will clarify substantially whether and how infections relate to human cancers and associated



James Goedert, M.D., Preceptor, Viral Epidemiology Branch, Division of Cancer Epidemiology and Genetics, NCI

conditions, to discover new viruses, and to train and facilitate others in such research.

Chief: Allan Hildesheim, Ph.D.

HUMAN GENETICS PROGRAM

The **Clinical Genetics Branch** integrates clinical observations into an interdisciplinary approach involving clinical, genetic, epidemiologic, statistical, and laboratory methods to define the role of susceptibility genes in cancer etiology; translates molecular genetic advances into evidence-based management strategies (including screening and chemoprevention) for persons at increased genetic risk of cancer; identifies and characterizes phenotypic manifestations of genetic and familial cancer syndromes; counsels individuals at high risk of cancer; investigates genetic polymorphisms as determinants of treatmentrelated second cancers; and pursues astute clinical observations of unusual cancer occurrences that may provide new clues to cancer etiology.

Chief: Mark H. Greene, M.D.

The Genetic Epidemiology Branch

designs and conducts interdisciplinary clinical, epidemiologic, genetic, and laboratory studies of persons, families, and populations at high risk of cancer. These investigations identify genes and exposures conferring cancer predisposition and explore the combined effects of predisposition and specific exposures. As part of this effort, the branch maintains a familial cancer registry and biospecimen repositories. Families participating in specific studies receive counseling about their risk of cancer and about screening or intervention options.

Chief: Margaret A. Tucker, M.D.

The Laboratory of Translational Genomics develops new approaches to the study of the genetic basis of cancer and its outcomes. The lab seeks to understand the genetic basis of SNP markers validated in large scale, genomewide association studies (GWAS). Specifically, the laboratory has integrated approaches to identify and validate common SNPs and ancestral haplotypes, which could be used to dissect the genetic basis of disease susceptibility.

Chief: Stephen Chanock, M.D.



"The CPFP provided me with a unique opportunity to combine training in medical oncology, cancer prevention, and public health in one fellowship."

Sheila Prindiville, M.D., M.P.H., Fellow Alumna. Office of the Director, NCI

Center for Cancer Research

The Center for Cancer Research (CCR) is composed of many different programs, laboratories, and branches and has over 250 principal investigators. These investigators conduct cutting-edge basic and clinical research on the discovery of causes and mechanisms of cancer for the prevention, diagnosis and treatment of cancer and other diseases. Further information can be found at http://ccr.nci. nih.gov.

The Experimental Immunology Branch carries out basic research in immunology. It consists of 10 independent research laboratories, a flow cytometry facility and a digital microscopy

facility, all focused on multiple aspects of basic immunology.

Chief: Alfred Singer, M.D.

The **Laboratory** of Cancer Prevention

investigates the molecular basis of cellular processes that, when perturbed, can lead to cancer induction and progression. Discovery and characterization of molecular targets for cancer prevention and intervention is a common area of interest throughout the lab.

Chief: Nancy H. Colburn, Ph.D.



Nancy Colburn, Ph.D., Preceptor, Laboratory of Cancer Prevention, Center for Cancer Research,

The Molecular Targets Development

Program provides leadership for converting CCR's basic science advances into drug leads, bioprobes, and reagents for molecular target evaluation. The program exploits chemical and biodiversity repositories, including the NCI Natural Products Repository, for molecularly targeted lead discovery.

Chief: James B. McMahon, Ph.D.

The Cell and Cancer Biology Branch

conducts investigations into the molecular mechanisms of cellular transformation, tumorigenesis, and metastasis with the goal of applying this knowledge towards prevention of and intervention in human carcinogenesis.

Chief: Kathleen Kelly, Ph.D.



Michael Birrer, M.D., Ph.D., Preceptor, Cell and Cancer Biology Branch, Molecular Mechanisms Section, Center for Cancer Research, NCI

The **Molecular** Mechanisms Section of the Cell and Cancer Biology Branch conducts translational science research into the biology and molecular biology of the early activation events in human epithelial cancer. The primary goal of this section is to understand the molecular basis of

these events and, through that understanding, rationally design or identify novel agents that can inhibit the development and spread of human cancer.

Head: Michael Birrer, M.D., Ph.D.

The Laboratory of Cancer Biology and Genetics conducts an integrated research program designed to elucidate the cellular and tissue changes associated with specific stages of carcinogenesis, to define the molecular mechanisms involved, and to develop rational approaches for cancer prevention. Studies are performed in vivo in experimental animals, in vitro in cell and organ culture, and on tissues and cells obtained from human volunteers and cancer patients.

Chiefs: Stuart H. Yuspa, M.D. and Glenn Merlino, Ph.D.

The primary focus of the **Transgenic** Oncogenesis Group of the Laboratory of Cellular Regulation and Carcinogenesis is to determine molecular mechanisms involved in prostate and mammary tumorigenesis using transgenic mouse approaches. A primary goal is to define what molecular events are involved in tumor progression and how this information may be used for targeting novel therapies to prevent cancer development or to inhibit tumor progression.

Head: Jeffrey Green, M.D.

The research in the **Laboratory of Cellular** Oncology focuses on normal and abnormal growth regulation, protein trafficking, cell signaling, gene regulation by retroviruses, and papillomaviruses. Current investigations include studies of myeloid leukemia, p53 regulation, E-cadherin and regulation of Arf family proteins. The papillomavirus research is concerned with mechanisms of virus assembly, cell transformation by the viral oncogenes and their protein products, the epidemiology and natural history of papillomavirus infection, and the development of a vaccine against genital papillomavirus infection and cervical cancer.

Chief: Douglas R. Lowy, M.D.

The Laboratory of Comparative

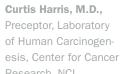
Carcinogenesis is a chemical carcinogenesis laboratory devoted to investigating mechanisms of action of carcinogenic agents. Its principal research emphases are currently on cell signaling during the neoplastic change, perinatal carcinogenesis, lung tumorigenesis and tumor promotion, developmental renal biology, carcinogenic metals, and nitric oxide and the pharmacologic potential of nitric oxide-generating compounds.

Chief: Larry K. Keefer, Ph.D.

The **Laboratory of Human Carcinogenesis**

conducts investigations to assess: (1) mechanisms of carcinogenesis including the cellular functions of tumor suppressor genes and oncogenes; (2) experimental approaches in biological systems for the extrapolation of carcinogenesis data and mechanisms from experimental animals to humans; and (3) molecular epidemiology of human cancer risk.

Chief: Curtis C. Harris, M.D.



Research, NCI



Stefan Ambs, Ph.D., Preceptor, Laboratory of Human Carcinogenesis, The Breast and Prostate Unit. Center for Cancer Research, NCI

The **Breast and** Prostate Unit of the Laboratory of Human Carcinogenesis investigates the relative contribution of genetic and environmental factors to human breast and prostate cancer causation.

Head: Stefan Ambs. Ph.D.

The **Laboratory of Metabolism** conducts research in the areas of

chemical carcinogenesis, mammalian development and gene control, and cell cycle control. It is composed of six sections focused on the study of: carcinogen metabolism, endocrinology, cell cycle regulation, high-mobility chromatin-associated proteins, gene regulation, and cytochrome P450s.

Chief: Frank Gonzalez, Ph.D.

The **Laboratory of Molecular Immunoregulation** performs fundamental research studies of the role of cytokines in inflammation, immunity, hematopoiesis and cancer. Scientists engage in the discovery and development of new cytokines and study the regulation of cytokine production at the gene level, the action of cytokines on target cells, and cytokine regulation of pathophysiological processes.

Chief: Joost J. Oppenheim, M.D.

The Laboratory of Tumor Immunology and **Biology** conducts research in the areas of tumor immunology, mechanisms of tumor cell-immune cell interactions, and immune mechanisms. The laboratory functions as an integrated translational research program with the goal of designing and developing new immunotherapies and immunologic strategies for cancer treatment and prevention.

Chief: Jeffrey Schlom, Ph.D.

The Laboratory of Experimental Immunology conducts studies on biological response modification and the application of these studies to cancer therapy. Basic science approaches utilize cellular, biochemical, and molecular techniques to study the regulation of cell-mediated immune effector mechanisms. cytokine gene expression and function, biochemistry of receptor-mediated signaling in leukocytes, and the biology of growth factors.

Chief: Giorgio Trinchieri, Ph.D.

The **Mammary Biology and Tumorigenesis Laboratory** conducts research on development, differentiation, and tumorigenesis in the mammary gland. The goal of the laboratory is to utilize multidisciplinary approaches encompassing areas such as endocrinology, molecular genetics, stem cell biology, growth factors, oncogenes, cell signaling,



Barbara Vonderhaar, Ph.D., Preceptor, Laboratory of Mammary Biology and Tumorigenesis, Center for Cancer Research, NCI

and animal model systems to understand the pathobiology of breast cancer.

Chief: Barbara Vonderhaar, Ph.D.

The **Medical Oncology Branch** functions:

1) To develop novel therapeutic research strategies for the treatment of cancer and to test those strategies by conducting clinical research in medical oncology; 2) To provide clinical care to adult cancer patients enrolled in research protocols; and 3) To train physician-scientists in a laboratory-to-clinic translational research setting to promote the development of their expertise in medical oncology research and to support their board certification by the American Board of Internal Medicine.

Chief: Guiseppe Giaccone, M.D.

The **Signal Transduction Section** in the Medical Oncology Branch is a multidisciplinary group that studies signaling pathways that contribute to lung tumorigenesis. Current efforts are focused on the role of the Akt/ mTOR pathway. Ongoing areas of investigation include the development of novel Akt inhibitors, the development and utilization of genetically engineered and carcinogen-driven mouse models of lung cancer, and the implementation of clinical protocols with pathway inhibitors for patients at high risk to develop lung cancer.

Head: Philip Dennis, M.D.

Members of the Mouse Cancer Genetics Program make use of molecular mouse genetics as a primary tool to better understand the fundamental processes underlying mammalian development and/or human disease.

Chief: Terry A. Van Dyke, Ph.D.

The Laboratory of Protein Dynamics and Signaling investigates mechanisms that regulate the fundamental cellular processes of differentiation, proliferation, survival, apoptosis and tumorigenesis. Research is predicated on the concept that understanding normal cellular function and human disease requires a solid mechanistic comprehension of crucial signaling pathways, their points of intersection and divergence as well as differential regulation by dynamic alterations in critical regulatory proteins.

Chief: Allan M. Weissman, M.D.

Office of the Director, NCI

The **Office of Cancer Complementary** and Alternative Medicine coordinates and enhances the activities of the NCI in the arena of complementary and alternative medicine (CAM), in order to increase the amount of high-quality cancer research in this field by promoting and supporting research within CAM disciplines and modalities as they relate to the prevention, diagnosis, and treatment of cancer, cancer-related symptoms. and side effects of conventional treatment. Further information can be found at http://cancer.gov/ cam.

Director: Jeffrey D. White, M.D. Deputy Director: Wendy B. Smith, M.A., Ph.D.

NCI planning and priority setting through the Office of Science Planning and Assessment (OSPA) involves the integration of input from individuals at NCI on our advisory boards in other government agencies and in research, professional, and advocacy organizations. OSPA staff provide guidance and coordination for these



Holly Massett, Ph.D., Preceptor, Office of Education and Special Initiatives, NCI

efforts, working alongside NCI leaders and staff to articulate priorities, develop strategies and plans and communicate them to stakeholders and the public. Further information can be found at http:// planning.cancer.gov/index.shtml.

Director: Margaret Ames, Ph.D.

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Post-Fellowship Employment

Alumni of the CPFP are currently located at the following institutions:

49 fellows are at the following universities:

University of Maryland Baltimore

The University of Medicine and Dentistry of New Jersey

University of Massachusetts

Northwestern University Feinberg School of Medicine

University of Wisconsin-Madison

University of Arkansas for Medical Sciences

University of Delaware

New York University

University of Maryland, School of Medicine

Michigan State University

Duke University Medical Center

Indiana University School of Medicine

University of Maryland School of Medicine

The Pennsylvania State University

University of Waterloo

Economics Charite-Medical School Berlin

Michigan State University

Johns Hopkins School of Medicine

University of Texas at Austin

University of Pennsylvania

University of Colorado at Denver

Queens College of CUNY

University of Louisville School of Medicine

University of Minnesota

University of Maryland, SOM

University of Vermont College of Medicine

Yale University School of Medicine

University of Texas at Austin

The University of Texas at Brownsville and

Texas Southmost College

University of South Carolina

University of Tennessee Health Science Center

Wake Forest University School of Medicine

Michigan State University

The University of Texas, MD Anderson

Cancer Center

The Ohio State University

Morehouse School of Medicine

UT Southwestern Medical Center

Department of Clinical Sciences

The University of Texas at Brownsville

and Texas Southmost College

University of Florida

Howard University Cancer Center

Rollins School of Public Health

Emory University

Morehouse School of Medicine

8 fellows are at the following cancer centers:

Fox Chase Cancer Center, Cheltenham, PA

H. Lee Moffitt Cancer Center and Research Institute, Tampa, FL

James Graham Brown Cancer Center, Louisville, KY

Puerto Rico Cancer Center, San Juan, PR

University of Texas M. D. Anderson Cancer Center,

Houston, TX

Washington Cancer Institute, Washington, DC

11 fellows are in the following medical practices:

Advanced Dermatology and Skin Surgery, Spokane, WA

Sumter, SC

Ameripath, Tulsa, OK Annapolis Medical Specialists, Annapolis, MD Christus Spohn Hospital, Corpus Christi, TX Hershey Medical Center, Hershey, PA Hospice of Lancaster County, Lancaster, PA Oncology Associates, Omaha, NE The Permanante Medical Group, Vallejo, CA Twomey Industrial Medicine and Wellness,

Dept. Veterans Affairs Medical Center, OK Washington Medical Center, DC

66 fellows are at the National Institutes of Health, Bethesda, MD:

National Heart, Lung and Blood Institute National Institute on Alcohol Abuse and Alcoholism

National Institute of Child Health and Human Development

National Institute of Dental and Craniofacial Research

National Institute on Nursing Research

NCI, Center for Cancer Research

NCI, Division of Cancer Control and Population Sciences

NCI, Division of Cancer Epidemiology and Genetics

NCI, Division of Cancer Prevention

NCI, Division of Cancer Treatment and Diagnosis

NCI, Division of Extramural Affairs

NCI, Office of Centers, Training

and Resources

NCI, Office of Deputy Director for Extramural Science

NCI, Office of Science Planning and Assessment

NIH Warren G. Magnuson Clinical Center Office of Medical Application of Research

9 fellows are at the following government agencies outside of NIH:

CDC, National Center for Health Statistics, Hyattsville, MD

CDC, Office on Smoking and Health, Atlanta, GA Centers for Medicare and Medicaid Services, Boston, MA

FDA, Center for Drug Evaluation and Research, Silver Spring, MD

FDA, Center for Food Safety and Applied Nutrition, College Park, MD

FDA, National Center for Toxicological Research, Jefferson, AR

25 fellows are at the following research firms or private organizations:

Cincinnati Children's Hospital Medical Center CSR, Incorporated

Robert Wood Johnson Foundation

Gradient Corporation

Nova Research Company

Hospice of Lancaster County

MSD-Management System Designers

Pacific Hematology Oncology Associates

Children's Hospital of Austin

WebMD/ViPS

Advanced Dermatology and Skin Surgery

The Council of State Governments

Westat

Exponent

Kaiser Permanente Medical Center

AmeriPath Tulsa

Genomic Nanosystems, Inc.

Pinney Associates

The Lancet

BioInformatics

Life Outside the NCI

The CPFP Office is located in the Division of Cancer Prevention at NCI in Rockville, Maryland, near the Nation's Capitol. With the convenient Metro subway reaching throughout the Washington, D.C. area, transportation is within easy reach.



Near the
NIH campus,
downtown
Bethesda supports
a diverse selection
of more than
180 restaurants
offering cuisine
from all over the
world.

Fifteen to 20 minutes away, Washington, D.C. offers magnificent monuments and world-class museums. The National Gallery of Art and the museums of the Smithsonian Institution are only the most

obvious; smaller museums such as the Phillips Collection and the Corcoran Gallery of Art should not be overlooked.



Other sightseeing opportunities such as the National Zoo, the Kennedy Center for the Performing Arts, the folk festivals, the cherry blossoms that bloom every spring, the numerous parades, and the many other worthwhile sightseeing adventures are nearby. Washington's best known outdoor recreational area, Rock Creek Park, offers a spacious and beautiful landscape that is much appreciated and heavily used by bicyclists, runners, and picnickers.

Washingtonians often make the trip to Baltimore to watch a baseball game or to enjoy the



Inner Harbor restaurants, aquarium, and shopping. Annapolis and the Chesapeake Bay are also nearby.

Within a short distance are the Atlantic coast beaches, the Shenandoah and Catoctin mountains, as well as the nearby ski resorts in Maryland and Pennsylvania. Also close by are the historic homes of George Washington and Thomas Jefferson.

Our weather covers all seasons from the leaves turning colors in the fall to the warm sun-kissed days of summer—we have it all!





Executive Plaza, Rockville, Maryland



NCI Summer Curriculum in Cancer Prevention, 2007—Course Participants



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