ROSWELL PARK CANCER INSTITUTE

Postdoctoral Fellowship Program in the Epidemiologic and Basic Science of Cancer Prevention

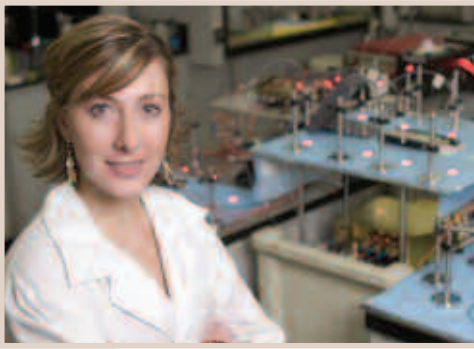
Overview

The Epidemiologic and Basic Science in Cancer Prevention Postdoctoral Fellowship Program, based in the division of Cancer Prevention and Population Sciences at Roswell Park Cancer Institute, is designed to bring basic science discoveries in cancer prevention and control to its fellows.

Funded by a grant from the National Cancer Institute (NCI), this training program enables basic science researchers to work more effectively with population researchers. It is designed to encompass translational training that spans several departments and scientific disciplines, within the Division of Cancer Prevention and Population Sciences and throughout the cancer center. The interdisciplinary-focused program at Roswell Park Cancer Institute (RPCI), is comprised of a diverse group of epidemiologists, nutritionists, basic scientists, research nurses and physicians—all having a strong career history of programmatic collaborations.

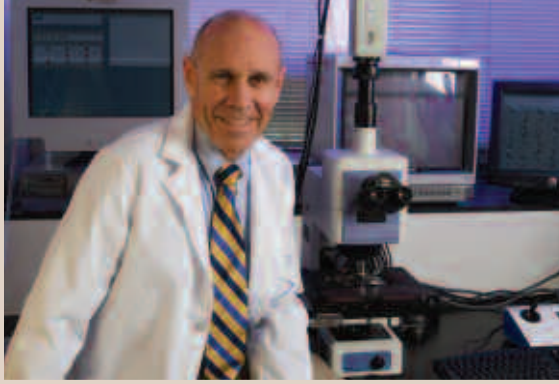
RPCI believes that future investigators in cancer prevention will require a broad array of knowledge and skills to develop and direct effective research that bridges disciplines. Therefore, trainees in this program will work with primary mentors to design a customized curriculum that will include courses, workshops, short-term hands-on experiences and laboratory activities. Trainees will work with one or more secondary mentors whose skills complement those of their primary mentor. There are excellent opportunities available for collaboration with clinicians working in breast, genitourinary, gastrointestinal, skin and hematopoietic cancers at RPCI. Through directed interaction with multiple mentors, each trainee will develop an interdisciplinary approach to cancer prevention research through the completion of core requirements, including specialized curriculum and in-depth research experiences. The overall goal of this training program is to guide postdoctoral cancer prevention scientists to develop the ability for interdisciplinary collaboration.



Our vision of cancer prevention at Roswell Park Cancer Institute is drawn from extending the bench to bedside paradigm of translational research. For prevention, this needs to be from bench to sidewalk, integrating basic bench, epidemiologic and population

"Translation of basic science is critical, not just to therapeutic advance, but also to more effective prevention," said James Marshall, PhD, Senior Vice President, Cancer Prevention and Population Sciences, RPCI.



sciences in cancer prevention. In this vision we maintain, prevention demands that the translation of basic sciences–genetics, biochemistry and molecular biology–be integrated with the sciences of prevention: epidemiology and population sciences.

What is critical for those seeking a career in Cancer Prevention and Control is the linkage of cutting-edge basic science to population analysis. Molecular biology promises new biomarkers of susceptibility and early disease; these will have to be tested in population settings. Chemoprevention represents the hope that much of cancer can be averted. Realization of these advances will require population scientists who can communicate and work with basic scientists and basic scientists who can communicate with population scientists.

Why Roswell?

Since its founding in 1898, Roswell Park Cancer Institute (RPCI), headquartered in Buffalo, New York, has made monumental contributions to the fight against cancer. As one of only 40 comprehensive cancer centers designated by the NCI, RPCI launched the first chemotherapy program in the United States, developed the prostate-specific antigen (PSA) test for detecting and managing prostate cancer and pioneered photodynamic therapy (PDT), a revolutionary therapy that combines patented light-sensitive drugs with laser light to destroy cancer cells.

RPCI was a major player in the landmark Human Genome Project, and its comprehensive cancer genetics program is a world leader.

In recent years, RPCI has invested millions of dollars in its faculty and campus to fuel a new era of innovation. Our heritage, reputation and potential for further breakthroughs continue to attract highly talented scientists from across the nation and around the world.

Roswell Park Cancer Institute Vital Statistics

Hospital Admissions: ***4,200***
Outpatient Visits: ***162,000***
Patients Under Active Care: ***24,027 (6,805 new)***
Patient Origin: ***36 states, 5 foreign countries***
Beds: ***Certification for 133; 101 in service***
Grants/Contracts: ***$80 million annually***
Funded Research Projects: ***500***
Academic Affiliation: ***University at Buffalo***
Employees: ***More than 2,900, including 242 physicians and scientists and more than 470 nurses***

Research Powerhouse

RPCI's groundbreaking basic and clinical research programs attract approximately $90 million in research grants and contracts each year.

RPCI and its prominent "next-door" neighbors—the Structural Biology Research Center of Hauptman-Woodward Medical Research Institute and the New York State Center of Excellence in Bioinformatics of the University at Buffalo—constitute the Buffalo Life Sciences Complex of the Buffalo-Niagara Medical Campus. The three research powerhouses share specific resources, including the University at Buffalo's world-class supercomputing facilities, and work together in areas of mutual research.

Program Goals

This program provides future investigators in cancer prevention with the opportunity to learn from broad-based experts in the fields of epidemiology, genetics, biochemistry and cell biology, carcinogenesis, chemoprevention, and clinical science in the pursuit of cancer prevention.

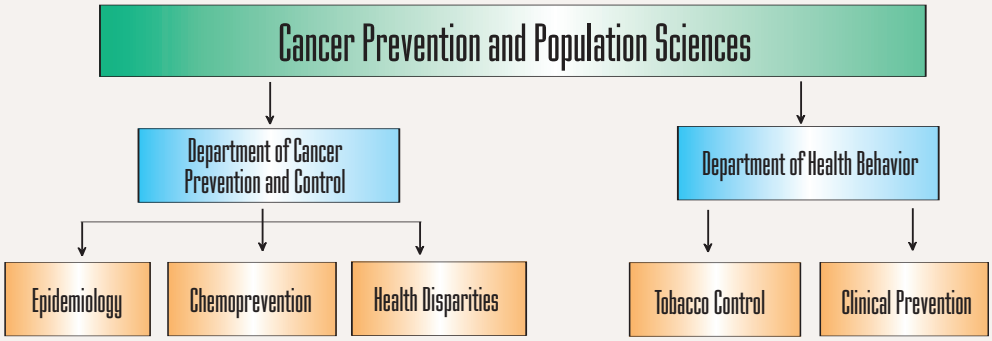
Designed to train a new generation of cancer prevention scientists, this program will link the methods of molecular biology and cancer epidemiology. With an understanding of cancer biology and processes, trainees will be expected to apply biomarkers of exposure, early biologic effects and pre-disease end-points, as well as genetic susceptibility, to studies of cancer etiology. Training in epidemiology and clinical trials provides the capabilities to basic scientists seeking to work in human cancer prevention, by developing skills to ask and answer questions relevant to human populations.

The preventionist of the 21st century will need to learn enough about key disciplines outside of his/her area of expertise in order to collaborate with researchers whose training is in those other fields. For example:

- The epidemiologist seeking to address the impact of environment exposures on disease risk needs to be able to work with geneticists familiar with the concept of polymorphic variation.
- The basic scientist investigating the use of chemotherapeutic agents for chemoprevention needs to work with epidemiologists on statistical power, on monitoring subjects and compliance over periods extending years, on blinding procedures, and on evaluating minor toxicities that can significantly decrease compliance among healthy, but high-risk individuals.
- The epidemiologist testing chemopreventive drugs needs to understand the dynamics of genetic changes in biomarkers so they can be appropriately used in prevention trials; he/she needs to be able to work and communicate with molecular biologists.

The Curriculum

The coursework will enable the trainee to communicate with researchers with expertise in a range of other fields; give the trainee an appreciation of how research in these other fields is conducted; help the trainee understand how researchers in other fields conceptualize their work; and understand the problems that can potentially block progress. This program will increase the postdoctoral trainee's awareness of how work in another field might advance hypothesis-driven research in cancer prevention and control.



The following are core courses:

- **Responsible Conduct of Research –** addresses research misconduct; ethics and animal subjects; the Institutional Review Board; conflicts of interest; and ethical dilemmas in the study of cancer genetics.

- **Cancer Prevention and Control –** focuses on concepts, methods, issues and applications related to this field. Students will gain experiences through didactic lectures, critical appraisal of the literature, group discussions and presentations.

- **Oncology for Scientists –** addresses the nature of cancer, including the process of malignant transformation, growth and spread; genetic processes in cancer; immunology and cancer; epidemiology; chemoprevention; therapeutic options and strategies; and the clinical nature of major cancers.

- **Analysis of Health-Related Data –** teaches data handling and analysis, and requires that students establish a hypothesis and work with a data set to address that hypothesis.

Trainees with basic bench science training, as in genetics, biochemistry or molecular biology, will need basic exposure to epidemiologic study designs and the use of statistical data. These fellows will need to take courses in cancer epidemiology and biostatistics:

Cancer Epidemiology and **Introduction to Statistics** or **Introduction to Biostatistics.**

Additional course requirements will be negotiated by the trainee, primary mentor and the Executive Advisory Committee.

Trainees will have multiple opportunities to hone their writing skills and obtain training in grant writing. Roswell Park Cancer Institute's Department of Educational Affairs and its affiliate company, Health Research, Inc., offer half-day grant writing workshops that cover topics including locating sources of funding; composition of a successful grant; budgeting; the review process; and a panel discussion of currently supported scientists/physicians.

Trainees will be expected to write a scientific paper in the context of the course, **Analysis of Health-Related Data**. They will also work with their mentors on publications during their training period, and will be expected to participate in the Department of Epidemiology's **Works in Progress** meetings, where faculty and students present papers in progress for discussion and critique.

In addition to coursework, trainees will participate in a selection of currently active seminars based on their needs.

- **Cancer Prevention Grand Rounds**
- **Faculty Forum**
- **Brown Bag Seminar Series**
- **Work in Progress Seminar Series**
- **Research Rounds**
- **Lab and Program Meetings**
- **Disease-Specific Research Groups**

Research Experiences

The trainees work within the laboratory or research structure of a primary mentor, interacting with and learning how that mentor operates and conducts his or her work. The primary mentor is in a discipline similar to that in which the fellow is trained. To create an interdisciplinary focus, it is necessary to encourage the trainee to develop greater expertise in his or her primary area of training, and then to extend that in conjunction with other disciplines.

Faculty Leaders:

James Marshall, PhD
Senior Vice President
Cancer Prevention & Population Sciences

Clement Ip, PhD
Member, Department of Chemoprevention

Participating faculty:

Christine Ambrosone, PhD
Chair, Department of Cancer Control and Prevention

John Cowell, PhD
Chair, Cancer Genetics

K. Michael Cummings, PhD
Chair, Department of Health Behavior

Stephen Edge, MD
Clinical Chair, Breast & Soft Tissue Melanoma

Jo Freudenheim, PhD (UB)
Chair, Social & Preventive Medicine

John Gibbs, MD
Chief, Gastrointestinal and Endoscopy

Gary Giovino, PhD, MS (UB)
Professor, Health Behavior

Andrew Hyland, PhD
Associate Member, Health Behavior

Margot Ip, PhD
Member, Pharmacology & Therapeutics

Candace Johnson, PhD
Senior Vice President
Translational Research

Lynn Kozlowski, PhD (UB)
Chair, Health Behavior

Martin Mahoney, MD, PhD
Associate Member, Prevention

Susan McCann, PhD
Associate Member
Epidemiology & Prevention

Philip McCarthy, MD
Staff Physician
Medical Oncology/Blood and Marrow Transplantation

Arthur Michalek, PhD
Dean, Senior Vice President
Educational Affairs

James Mohler, MD
Chair, Urology

Kirsten Moysich, PhD
Associate Member, Prevention

Norma Nowak, PhD
Facility Director, Microarray

Kunle Odunsi, MD, PhD
Attending, Gynecologic Oncology

Mary Reid, PhD
Assistant Member
Epidemiology & Prevention

Nestor Rigual, MD
Staff Physician
Head & Neck/Plastic Surgery

Yuesheng Zhang, MD, PhD
Associate Member, Chemoprevention

Application Process

Eligible candidates must have completed doctoral training in epidemiology, social science, genetics, biochemistry, molecular biology or in the clinical disciplines. Candidates must be USA citizens or have a green card. Address inquiries to Alicia Tuyn, Program Coordinator, Cancer Prevention and Population Sciences, Roswell Park Cancer Institute, Elm and Carlton Streets, Buffalo, New York, 14263. If you wish to send via email, please write R-25 Postdoctoral Training Program in the subject line and send to **alicia.tuyn@roswellpark.org**. A curriculum vitae should be included with your inquiry.

The University at Buffalo (UB) is offering a similar predoctoral program; to learn more, please visit **sphhp.buffalo.edu.spm.** To read a press release about this program, go to **www.roswellpark.org/futureprevention.**

The RPCI Campus

Set on 25 acres in downtown Buffalo, New York, the RPCI campus comprises 15 buildings. All clinical activities, didactics and basic science research take place on this campus. Approximately 60 percent of the campus has undergone major renovation or has been newly built since 1998.

The Roswell Park Hospital houses a stand-alone Clinical Research Center that will greatly expand the number of RPCI patients enrolled in clinical research studies. RPCI has sponsored or collaborated on more than 500 clinical trials of new and innovative cancer treatments.

Newest among the RPCI facilities is the $74 million Center for Genetics & Pharmacology, opened in 2006, which houses the Institute's core resource facilities and the Cancer Genetics and Pharmacology departments.

The Buffalo Niagara Region

Set at the eastern end of Lake Erie, Buffalo is just 30 miles from Niagara Falls and a two-hour drive from Toronto, Ontario. The region enjoys moderate winter and summer temperatures, setting the stage for outstanding recreational opportunities, including winter skiing at area resorts and summer boating on the lake.

RPCI is close to all the action in the City of Good Neighbors–just 10 minutes from the Albright-Knox Art Gallery, Delaware Park, Buffalo Zoo and Erie Basin Marina, and two blocks from historic Allentown, a community noted for artists, antiques, gourmet restaurants, coffeehouses and historic homes. Nationally noted for its architecture, Buffalo is a popular destination for those attracted to the work of Frank Lloyd Wright.

Kleinhans Music Hall is home to the Buffalo Philharmonic, consistently ranked among the nation's top 10 symphonies, and a thriving theatre district with a rich diversity of offerings. Sports fans follow the action of the area's major-league teams–the NFL Bills, NHL Sabres, MILL Bandits and the Buffalo Bisons, an American Association baseball team.

ROSWELL PARK CANCER INSTITUTE

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www.roswellpark.org

NCI CCC
A Comprehensive Cancer Center Designated by the National Cancer Institute

NCCN National Comprehensive Cancer Network

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