Health Research Science Board

NEW YORK STATE
DEPARTMENT OF HEALTH

BIENNIAL REPORT

January 1, 2009 to December 31, 2010

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Health Research Science Board Membership Roster

January 1, 2009 - December 31, 2010

Santo M. DiFino, MD, Chair [1]
Hematology-Oncology Associates of Central New York, PC
Syracuse, NY

Beverly Canin [2]
Breast Cancer Options, Inc.
Survivor, Hudson Valley Region

Susan Cohen, JD [2, 7]
New York State Breast Cancer Network
Survivor, NYC Region

Heather C. Dantzker, PhD [3, 5]
Cornell University
Ithaca, NY

Victoria Derbyshire, PhD
New York State Department of Health
Commissioner's Designee
Albany, NY

Gail Frankel [1, 5]
Survivor, Long Island Region

Alexander Gross [1, 2]
Man-to-Man Awareness and Support Group
Syracuse, NY

M. Suzanne Hicks [1]
Capital Region Action Against Breast Cancer! (CRAAB!)
Survivor, Northern NY Region

Russell Hilf, PhD [1]
University of Rochester
School of Medicine and Dentistry
Rochester, NY

Donna Jurasits [1, 4, 5]
Babylon Breast Cancer Coalition
Babylon, NY

Diana E. Lake, MD [1]
Memorial Sloan-Kettering Cancer Center
New York, NY

Gary Morrow, PhD [1]
University of Rochester
Rochester, NY

Dexter A. McKenzie, MD [1, 4]
Downstate Medical Services PC
Brooklyn, NY

Arun Puranik, MD [1]
Image Guided Radiation Therapy
Latham, NY

Robert Riter [2, 6]
Cancer Resource Center of the Finger Lakes
Survivor, Central NY Region

Neeta Shah, MD [1]
North Shore-Long Island Jewish Health Systems
New Hyde Park, NY

Suzanne M. Snedeker, PhD [3, 4, 5]
Cornell University
Ithaca, NY

Elinor J. Spring-Mills, PhD [1]
SUNY Upstate Medical University
Syracuse, NY

Val Washington, JD [3, 5]
NYS Department of Environmental Conservation
Commissioner's Designee
Albany, NY

Barbara Weiser, MD [3, 4, 5]
New York State Department of Health
Commissioner's Designee
Albany, NY

Marc Wilkenfeld, MD [1]
Columbia University Medical Center
New York, NY

Karen S. Zier, PhD [1, 4, 5]
Mount Sinai School of Medicine
New York, NY

1 Voting member
2 Non-voting member
3 Ex-officio non-voting member
4 Appointed during 2009-2010
5 Resigned during 2009-2010
6 Became voting member during 2010
7 Deceased, 2010

Health Research Science Board
Committee Rosters
January 1, 2009 - December 31, 2010

Committee on Funding and Outreach

Elinor Spring-Mills, PhD, Chair
SUNY Upstate Medical University

Gail Frankel [1]
Regional Survivor – Long Island

Alexander Gross [1]
Man-to Man Awareness and Support Group

Donna Jurasits [1]
Babylon Breast Cancer Coalition

Karen Zier, PhD [1]
Mount Sinai School of Medicine

Committee on Program Needs and Effectiveness

Santo DiFino, MD, Chair
Hematology-Oncology Associates of Central NY, PC

Beverly Canin
Regional Survivor – Hudson Valley
Breast Cancer Options, Inc.

Susan Cohen [2]
Regional Survivor – NYC

M. Suzanne Hicks
Regional Survivor – Northern NY

Gary Morrow, PhD
University of Rochester

Bob Riter
Cancer Resource Center of the Finger Lakes

Neeta Shah, MD
North Shore-Long Island Jewish Health Systems

1 Resigned during 2009-2010
2 Deceased, 2010

Committee on Access to Pesticide Registry and Pesticide Application Information

Syni-An Hwang, PhD, Chair
NYSDOH, Center for Environmental Health

Nancy Kim, PhD, Chair [1]
NYSDOH, Center for Environmental Health

Erin Bell, PhD
SUNY School of Public Health

William Cooke
Citizens Campaign for the Environment

Heather C. Dantzker, PhD [1]
Cornell University

Mara Ginsberg, Esq.
Hinman Straub, PC and To Life!

John Hassett, PhD
SUNY College of Environmental Science and Forestry

David McMaster
Bartlett Tree Experts

Erin O'Leary, PhD
SUNY at Stony Brook

Alan Rabideau, PhD
SUNY at Buffalo

Edwin Van Wijngaarden, PhD
University of Rochester Medical Center

H. Pat Voges
Nassau Suffolk Landscape Gardeners Association

Mark Wilkenfeld, MD
Columbia University Medical Center

Jeffrey Williams
New York Farm Bureau

[1] Resigned during 2009-2010

Department of Health Staff

Wadsworth Center
Extramural Grants Administration

Bonnie Jo Brautigam
Executive Secretary to the Board and Director, Extramural Grants Administration

Teresa K. Ascienzo
Associate Accountant

Lani Rafferty
Health Program Administrator 2

Mary Ryther
Health Program Administrator 1

Center for Environmental Health
Bureau of Environmental and Occupational Epidemiology

Syni-An Hwang, PhD
Research Scientist 6

Carole Ju, MS
Research Scientist 4

Division of Legal Affairs
Bureau of House Counsel

Diana Yang, JD
Senior Attorney

Department of Environmental Conservation Staff

Bureau of Pesticides Management

Margaret O'Neil
Environmental Program Specialist 3
Chief, Pesticide Reporting and Certification Section

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HEALTH RESEARCH SCIENCE BOARD
BIENNIAL REPORT 2009-2010

Executive Summary

The Health Research Science Board (Board, HRSB) of the New York State Department of Health (DOH) was created to support innovative breast cancer scientific research and education projects within New York State. The Board also considers requests for confidential pesticide information for use in specific health related research projects, and models and supports cooperation between New York researchers and the breast cancer advocate community.

Projects are supported by the Breast Cancer Research and Education Fund, which is financed through voluntary contributions from a check-off mechanism on the New York State Income Tax form; New York State subsequently began matching those donations in 2000.

The Board is grateful to the many New York State residents who have contributed so generously to the Breast Cancer Research and Education Fund and to the Governor and Legislature for State matching of income tax donations.

Among the accomplishments of the Board and program in 2009-2010 were:

- **Taxpayer Gifts**
  More than $1 million in funds was contributed via the income tax check-off mechanism during the period covered by this biennial report. This amount is matched dollar-for-dollar from State funds. The total dollar amount of these gifts has decreased by approximately 5% during recent years, along with a gradual decline in the number of tax returns with gifts. Despite this decline, the Breast Cancer Research and Education Fund receives more individual gifts and receives a higher average donation than any of the other contribution options offered on the tax return.

- **Health Research Science Board**
  Four voting members, one non-voting member and two ex-officio non-voting members were appointed during this biennial period. Five voting seat and one non-voting seat vacancies remained at the end of 2010. The Board met eight times and conducted two public hearings during 2009-2010.

- **Health Science Research Board Committees**
  Two of the Board's committees were revitalized during 2009-2010. The Committee on Funding and Outreach and the Committee on Program Needs and Effectiveness met several times and each committee made relevant recommendations to further the mission and success of the Board.

- **Peter T. Rowley Breast Cancer Research Projects and Postdoctoral Fellowship Awards**
  Rowley Awards support preliminary testing of novel or exploratory hypotheses related to breast cancer. Postdoctoral Fellowships are intended to support continued training of basic or clinical investigators with exceptional potential for making significant contributions to the field of breast cancer research. The Board recommended funding seven Rowley and one Postdoctoral Fellowship Awards totaling $2.6 million in research funding. Institutions recommended for funding are located throughout New York State.

The Board approved issuance of the 2010 Peter T. Rowley Breast Cancer Research Projects Request for Applications (RFA). The 2010 Rowley Awards RFA is essentially unchanged from previous years except that it is no longer combined with a mechanism to fund postdoctoral fellowships.

- **Patricia S. Brown Breast Cancer Education Community-Based Demonstration Projects Award**
  The 2009 Brown Award RFA encourages Community Based Organizations (CBOs) to collaborate with researchers from accredited academic institutions to design and assess new breast cancer education programs and materials. The Board recommended one award of $150,000 to support an education research project.

- **Household Pesticide Use Reporting**
  After review of Oregon's experience with household pesticide use reporting, the Board concluded that the information did not support including household pesticide use in New York's reporting requirements at this time.

- **Independent Scientific Peer Review Services**
  Following a competitive bidding process, a contractor was selected to manage the independent scientific peer review of applications for funding.

The Board appreciates the opportunity to work for the citizens of New York State to support critical biomedical and educational research in breast cancer, while simultaneously stimulating economic development within New York. The Board looks forward to and anticipates continued progress and success in achieving its mandates.

STATE OF NEW YORK, DEPARTMENT OF HEALTH

HEALTH RESEARCH SCIENCE BOARD

January 1, 2009 to December 31, 2010

I. INTRODUCTION

Breast cancer is one of the most common cancers among women in New York State.

Each year, nearly 14,000 women are diagnosed with breast cancer and about 3,000 women die from the disease in New York. It is estimated that one in eight women will develop breast cancer sometime during her life.

While men are also diagnosed with breast cancer, the incidence is very rare. About 150 men are diagnosed with breast cancer each year in New York State.

The Health Research Science Board (HRSB, Board) of the New York State Department of Health (DOH) was created to support innovative breast cancer scientific research and education projects within New York State. Additionally, the Board considers requests for confidential pesticide information from the New York State Pesticide Sales and Use Database for specific health-related research projects. The Board also models and supports cooperation between New York researchers and the breast cancer advocate community.

The Board was established pursuant to Chapter 279 of the Laws of 1996 (amended by Chapter 219 of the Laws of 1997 and Chapter 32 of the Laws of 2008). The legislation is codified in Title 1-B, Article 24 (§ 2410-2413) of the New York State Public Health Law (PHL). Chapter 279 also established the Breast Cancer Research and Education Fund, to be financed through voluntary contributions from a check-off mechanism on the New York State Income Tax form (§ 97-yy of the State Finance Law). New York State subsequently began matching those donations pursuant to Chapter 550 of the Laws of 2000.

Additionally, Chapter 279 established a Pesticide Sales and Use Database, maintained by the New York State Department of Environmental Conservation (DEC) in conjunction with Cornell University, pursuant to Environmental Conservation Law (ECL) § 33-1201 through § 33-1207. The database contains mandated reports of pesticide applications by all commercial applicators. In addition, entities that offer restricted-use pesticides for sale to private applicators for use in agricultural crop production must report any such sales.

The Board's primary responsibilities, as delineated in PHL § 2411(1), include:

- Recommending awards for research and education

  The Board makes recommendations to solicit, receive, and review applications from various entities for funds to conduct research and education programs focusing on the causes, prevention, screening, treatment and cure of breast cancer. Such research funding is distributed through a formal Request for Applications (RFA) process leading into executed contracts.

- Reviewing requests for access to confidential pesticide-related data

  The Board is responsible for evaluating requests for and granting access to confidential pesticide-related data collected and maintained in the New York State Pesticide Sales and Use Database. The data include: 1) reports of pesticide applications submitted to DEC by commercial applicators and technicians; 2) reports of sales of restricted pesticides to private applicators; and 3) reports of general-use pesticide sales for use in agricultural crop production. While a large portion of the database is public, some of it is confidential and may only be released to those engaging in human health-related research, pursuant to the Board's approval and contingent on compliance with established criteria.

- Issuing Biennial Reports

  This, the Board's seventh biennial report, summarizes its 2009-2010 activities and program operations with regard to its major functions. As required by statute, this biennial report includes:

  1. The Board's recommendations on matters including, but not limited to, the types of pesticide data useful for breast, prostate or testicular cancer research; and whether private citizen use of residential pesticides should be covered in the reporting requirements;

  2. A summary of research requests for pesticide data granted and denied;

  3. An evaluation by the Commissioners of Health and Environmental Conservation, as well as the Board, of the basis, efficiency and scientific utility of the information derived from pesticide reporting pursuant to ECL § 33-1205 and 33-1207, and recommendations on whether such an information system should be modified or continued; and

  4. A summary of comments and recommendations presented by the public at the Board's public hearings.

The Board's enabling statutes are found in Appendices I-V and the bylaws governing the Board's activities are found in Appendix VI.

II. BOARD ORGANIZATION and MEMBERSHIP

The Board's original statutory composition was amended in 2008 to enlarge and reconfigure the Board and to include voting representation from breast cancer survivors from various geographic regions of the state. As a result, the Board now includes 17 voting members and six non-voting members, as follows:

- 12 voting doctoral-level scientists and physicians appointed by the Governor and the Legislature;

- 3 voting regional breast cancer survivors who are actively involved with community-based, grass-roots breast cancer organizations;

- 1 voting breast cancer survivor;

- 1 voting prostate or testicular cancer survivor;

- 3 non-voting ex-officio members representing the DOH, the DEC, and Cornell University's Institute for Comparative and Environmental Toxicology; and

- 3 non-voting regional breast cancer survivors who are actively involved with community-based, grass-roots breast cancer organizations.

The Board's Chair is designated by the Governor. Member terms are three years in length, with reappointment permitted. An individual member's Board service may continue beyond the prescribed term until the member is replaced. This process is designed to ensure the stability and continuity of the Board.

As of December 31, 2010, four voting vacancies remained, including three voting scientists/researchers and one voting regional breast cancer survivor (Western NY). A non-voting regional breast cancer survivor seat (Central NY) is also vacant. With this number of vacancies, nearly 24 percent of voting members, it is often uncertain whether quorum requirements can be met.

For more information on members, see Appendix VII.

While the legislation does not allocate funding for support staff and administration of the Program, the DOH supplies such support to the Board. In addition, DEC staff maintains the Pesticide Sales and Use Database and evaluates the basis, efficiency and scientific utility of the information derived from pesticide reporting.

III. BOARD OPERATIONS

Meetings

PHL § 2411(1)(h) requires the Board to meet at least four times annually, and one of those meetings must be a public hearing. Meetings are announced at least two weeks in advance and are open to the public. Additionally, a recording of each meeting is available via the Department of Health's public website at http://www.health.state.ny.us/events/webcasts/archive/ for 30 days after a meeting, opening the proceedings to a wide audience. Agendas and approved minutes are posted on the program's website at: http://www.wadsworth.org/breast cancer/, and are available upon request from the Board's Executive Secretary.

Table 1. Meetings Held, 2009-2010

DATE	BUSINESS MEETING	PUBLIC HEARING	COMMITTEE* MEETING(S)	LOCATION	VIDEOCONFERENCE SITE
March 6, 2009	X			Syracuse	Albany, Buffalo, New York City, Rochester
June 5, 2009	X			Syracuse	Albany, New York City, Rochester
October 2, 2009 a.m.	X		F&O	Albany	none
October 2, 2009 p.m.	X	X	PN&E	Albany	none
March 19, 2010	X		F&O, PN&E	Syracuse	Albany, New York City, Rochester
May 17, 2010			PN&E	Albany	Great Neck
June 4, 2010	X		F&O	Albany	New York City
September 13, 2010			PN&E	Albany	New York City
October 1, 2010 a.m.	X		F&O	Troy	none
October 1, 2010 p.m.	X	X		Troy	none
December 1, 2010			PN&E	Syracuse	New York City; Albany

*Committees Legend
F&O - Committee on Funding and Outreach
PN&E – Committee on Program Needs and Effectiveness

Bylaws

At its June 4, 2010 meeting, the Board approved an amendment to the bylaws to change the name of the Committee on Research Needs and Education Program Effectiveness to Committee on Program Needs and Effectiveness.

The current Bylaws can be found in their entirety in Appendix VI of this report.

Committees

The Committee on Program Needs and Effectiveness makes recommendations to the Board on program emphasis and scope, the award process and program evaluation. This Committee was fortified with new members and met four times during the reporting period. Specifically, the Committee discussed and approved the 2010 Peter T. Rowley Breast Cancer Research RFA and discussed the Education Research program.

The Committee on Funding and Outreach makes recommendations to the Board for final action with regard to developing innovative and effective strategies that will maximize the resources and public awareness of Board initiatives. This Committee was also fortified with

new members and met four times during this biennial period. The Committee approved the use of an HRSB logo, recommended that program staff update the income tax check-off awareness card, and discussed ways to direct members of the public and research community to the program web site. The Committee also discussed several other outreach initiatives to be explored in the coming year.

The Committee on Access to Pesticide Registry and Pesticide Application Information reviews requests by researchers for confidential pesticide registry information and confidential pesticide application information for use in human health-related research projects. The Committee did not receive any requests for information during the reporting period and thus did not meet during 2009-2010.

Public Hearings

In accordance with the Board's enabling legislation, public hearings were held on October 2, 2009 and October 1, 2010. In addition to programmatic updates from the Board's Executive Secretary, the Commissioner's designee provided a report on the efficiency and utility of pesticide reporting at each annual public hearing. During the public hearings, interested parties may comment on the Board's operations, the Breast Cancer Research and Education Fund, the Prostate and Testicular Cancer Research and Education Fund, and pesticide reporting.

No testimony was given and no comments were submitted for the 2009 or the 2010 public hearings (see Appendix VIII), other than the reports given by DEC staff (see Appendix IX).

Other Public Comments

In addition to public hearings, a segment of each Board meeting is set aside for public comment. A synopsis of comments from 2009-2010 Board meetings is presented below:

March 19, 2010
Harvey Reissig, PhD, Director of Cornell University's Pesticide Management Education Program, provided oral and written comments. Dr. Reissig inquired whether the Board would allow his staff to analyze the data collected for the Pesticide Sales and Use Registry Database in the future, since the Database falls under the Pest Management Education Program at Cornell.

Presentations and Reports to the Board

Presentations
During this biennial period, the Board successfully reinstituted its practice of inviting researchers to make presentations to the Board about their work or on other topics of interest to the Board. At its June 4, 2010 meeting, the Board heard a presentation from Kenneth Aldous, PhD of the Wadsworth Center, DOH. Dr. Aldous' talk was titled, "Biomonitoring — Assessment of Human Exposure to Environmental Chemicals." It is the Board's intention to have regular scientific presentations pertaining to breast cancer and related topics at Board meetings.

Reports

During 2009-2010, the Board heard the following reports:

June 5, 2009 Nancy Kim, PhD, Center for Environmental Health, DOH, reported on "Household Pesticide Use and Reporting in Oregon and Its Relation to New York". A summary of Dr. Kim's report can be found in Section V of this report, and the entire report is included in Appendix XI.

October 2, 2009 Maggie O'Neil, DEC, reported on "Pesticide Use and Reporting" at the annual public hearing to fulfill the statutory mandate to report on the basis, efficiency and scientific utility of the information derived from pesticide reporting. See Appendix IX.

October 1, 2010 Anthony Lamanno, DEC delivered a report from Maggie O'Neil, DEC, on "Pesticide Use and Reporting" at the annual public hearing to fulfill the statutory mandate to submit an annual report on the basis, efficiency and scientific utility of the information derived from pesticide reporting. See Appendix IX.

IV. PROGRAM FUNDS

The Breast Cancer Research and Education Fund supports contracts issued by the DOH on behalf of the Board. The Fund is financed by donations made by individuals and corporations on State income tax forms, direct gifts to the Fund, and one-half of the proceeds from sales of Drive for the Cure specialty license plates (Tax Law § 209-D and 627; and Vehicle and Traffic Law § 404-q). In 2002, New York State began matching income tax donations made to the Fund.

Deposits to the Fund since its inception in 1996 are presented below.

Table 2. Breast Cancer Research Fund Revenues, 1997-2010

Calendar Year	Tax Year	Tax Return Donations	License Plate Income	Actual Cash Deposits	Matching Funds Deposits	Interest (State Fiscal Year)	Cumulative Revenues
1997	1996	$686,689	$0	$23,641	$0	$3	$23,644
1998	1997	$524,185	$0	$693,863	$0	$28,403	$745,910
1999	1998	$593,321	$0	$509,209	$0	$60,571	$1,315,690
2000	1999	$642,794	$1,900	$586,405	$0	$85,499	$1,987,594
2001	2000	$620,040	$35,094	$710,362	$0	$119,114	$2,817,070
2002	2001	$592,886	$18,263	$607,747	$600,000	$79,405	$4,104,222
2003	2002	$532,389	$55,750	$599,212	$650,000	$52,056	$5,405,490
2004	2003	$545,629	$29,038	$531,195	$600,000	$36,127	$6,572,812
2005	2004	$529,646	$58,213	$586,395	$575,000	$55,013	$7,789,220
2006	2005	$541,417	$28,618	$614,619	$650,000	$156,285	$9,210,124
2007	2006	$547,807	$47,443	$415,611	$650,000	$294,787	$10,570,522
2008	2007	$562,027	$30,988	$655,226	$650,000	$292,431	$12,168,179
2009	2008	$524,460	$26,075	$650,281	$0	$107,267	$12,925,727
2010	2009	$535,447	$42,387	$577,839	$650,281	$20,236	$14,174,083
2011	2010	$284,025	$17,463	$301,488	$0	$11,337	$14,486,908
Totals				$8,063,093	$5,025,281	$1,398,534	$14,486,908

Due to the timing of the actual deposits, tax return donations and license plate revenues may not add to the actual deposits made for the SFY.

V. MAJOR ACTIVITIES OF THE BOARD AND PROGRAM

The Board monitors advances in the field, convenes symposia and solicits input and recommendations for future projects. The Board's major responsibilities are to:

- Award funds for research and education projects; and
- Advise on pesticide-related issues and oversee the Pesticide Sales and Use Database.

Breast Cancer Research and Education Projects

In keeping with its mandate, the Board solicits, receives, and reviews applications from public and private agencies, and organizations and qualified research institutions for projects supported by the Breast Cancer Research and Education Fund. The Board expects outcomes of supported activities to benefit subsequent breast cancer research or education efforts, breast cancer public health policy or the continuum of breast cancer care – from prevention to treatment and cure. To fulfill this vision, applicants for funding are invited to address any topic or issue related to breast cancer biology, causation, prevention, detection or screening, treatment (including treatment of its effects) or cure. Any investigative approach appropriate to the application topic may be pursued, including,

but not limited to, basic, behavioral, clinical, demographic, environmental, epidemiological, psychosocial or translational research.

Because program funding is low for a research program, the Board has recommended that funds for scientific research be used to support preliminary testing of novel or exploratory hypotheses related to breast cancer and that funds for education projects be used to plan and assess new breast cancer education programs and materials. Through the use of these targeted RFAs, the Board has recommended 96 research and education projects for funding, and the DOH has committed more than $10 million to support these programs via contracts since its first funding competition in 1998.

Table 3. Summary of HRSB Research Award Activities, 1998-2010

YEAR	FUNDS COMMITTED	FUNDS DISBURSED	AWARDS
1998	$1,461,892	$1,087,985	18 EMPIRE (EMPowerment Through Innovative Research and Education) Awards and 9 Postdoctoral Fellowship Awards
2001	$2,700,000	$2,669,152	19 EMPIRE Awards and 8 Postdoctoral Fellowship Awards
2002	$299,998	$188,821	4 Community-Based Organization Demonstration Awards
2004	$3,588,122	$3,262,828	30 Postdoctoral Fellowship Awards
2009	$149,942	$0	1 Patricia S. Brown Breast Cancer Education Community-Based Demonstration
2010	$2,441,295	$0	7 Peter T. Rowley Breast Cancer Research Project Awards (formerly EMPIRE)
2010	$177,270	$0	1 Postdoctoral Fellowship (declined)
TOTAL	$10,818,519	$7,208,786	97 Awards

Progress in Funded Research Projects

The 2004 Postdoctoral Fellowship Awards were scheduled to be completed by December 31, 2007. However, 11 contractors requested and received no-cost time extensions to continue their work in 2008. While these contracts ended during a previous reporting period, five contractors continued to submit exciting findings during 2009 and 2010.

Previously unreported highlights of research accomplishments related to five Health Research Science Board contracts appear in Appendix X.

2009 Peter T. Rowley Breast Cancer Research Project and Postdoctoral Fellowship Awards RFA

Peter T. Rowley Breast Cancer Research Project Awards (formerly EMPIRE) RFA supplies initial support for preliminary testing of novel or exploratory hypotheses related to breast cancer. Recipients are expected to open a new area of investigation, satisfactorily test a novel or innovative

hypothesis, or produce viable data for preparation of a full-scale research application to another organization.

Rowley projects constitute self-contained, hypothesis-driven research. Projects are considered innovative, developmental or exploratory in nature, and target new avenues of breast cancer research. Funded projects may include those considered highly speculative or exploratory that may not be based on pilot data, but have the potential for high scientific payoff. Researchers may seek to apply or develop state-of-the-art technologies, tools or resources for breast cancer research.

Eighteen Rowley applications were received in response to the 2009 RFA; the Board recommended seven applications for funding. Proposals cover a range of breast cancer research projects, including targeting integrin signaling in breast cancer prevention; moderating inflammatory response in breast cancer patients; using immunofluorescence in classifying intermediate risk of recurrence in early stage breast cancer patients; researching the optimal timing for women with newly diagnosed breast cancer to get genetic testing; targeting cell death in breast cancer cells, uncovering novel anticancer therapies using genomic studies, and predicting bone metastasis of breast cancer.

Postdoctoral Fellowships support continued training of basic or clinical investigators with exceptional potential for making significant contributions to the field of breast cancer research.

Two Postdoctoral Fellowships applications were received in response to the 2009 RFA. The Board recommended funding one successful application, which was a proposal to study a new imaging process using zirconium-89 labeled antibodies. This award was declined by the recipient.

Table 4. Summary of 2009 Rowley and Postdoctoral Fellowship Award Recommendations

Principal Investigator	Institution	Amount Awarded	Project Title
Andrei Bakin	Roswell Park Cancer Institute	$360,000	Targeting Integrin Signaling in Breast Cancer Prevention
Alice Ceacareanu	State University of New York at Buffalo	$348,988	Modulation of Inflammatory response by Diabetes Management in Breast Cancer Patients: A Potential Modifier?
Kluger Yuval	New York University School of Medicine	$339,336	A Quantitative Immunofluorescence-Based Approach to the Classification of Intermediate Recurrence Risk Early Stage Breast Cancer Patients
Mark Robson	Sloan-Kettering Institute for Cancer Research	$314,971	Optimal Timing of Genetic Testing for Women with Newly Diagnosed Breast Cancer
Herbert Samuels	New York University School of Medicine	$360,000	Targeting a Novel Pathway that Selectively Modulates Apoptosis of Breast Cancer Cells
Jose Silva	Columbia University	$360,000	Functional Genomic Studies to Uncover Novel Anticancer Therapies
Ping Tang	University of Rochester	$360,000	Predicting Bone Metastasis of Breast Cancer
Jason Holland (declined)	Memorial Sloan-Kettering Cancer Center	$177,270	Zirconimu-89 Labeled Antibodies for Imaging Breast Cancer with ImmunoPET

Overview of Rowley Research Applications

Andrei Bakin, PhD, Roswell Park Cancer Institute, "Targeting Integrin Signaling in Breast Cancer Prevention," 10/01/10 – 9/30/12, $360,000.

Breast cancer metastases are linked to epithelial-mesenchymal transition (EMT) and a cell invasive capacity. In the EMT process, cells break their contacts with neighboring cells, acquiring the ability to migrate and invade surrounding tissues and blood vessels. TGF-β cytokines are potent inducers of EMT and invasion. Therapeutic targeting of TGF-β is challenging due to tumor-suppressor activity of TGF-β in early-stage cancers. The investigators discovered that protein integrin-β5 is required for the TGF-β-induced EMT and invasion. This discovery may lead to therapeutics inhibiting pro-oncogenic activities of TGF-β.

The study will investigate a novel idea that integrin-β5 is critical for pro-oncogenic activities of TGF-β and will provide novel information on integrin-β5 and associated proteins as potential risk factors in breast cancer.

Function-interfering cell-penetrating peptides of integrin-β5 are potential therapeutics preventing tumor invasion and metastasis. Integrin-β5 and associated proteins may serve as biomarkers of breast cancer progression/metastasis.

Alice Ceacareanu, PhD, State University of New York at Buffalo, "Modulation of Inflammatory Response by Diabetes Management in Breast Cancer Patients: A Potential Modifier of Breast Cancer Prognosis?" $348,988, 10/01/10 – 9/30/12.

Survival following breast cancer is significantly reduced in women with diabetes. This has been attributed to diabetes-related causes; however, it is still unclear whether diabetes pharmacotherapy is indeed responsible for these outcomes. Cancer-related mortality in patients with type 2 diabetes mellitus is higher in patients that use insulin or insulin stimulating oral agents. It appears plausible that exogenous insulin or drugs stimulating insulin production may trigger an environment enriched in factors that nurture tumor growth. This may lead to breast cancer growth, recurrence and decrease survival.

Investigators hope to clarify whether evaluation of inflammation state and insulin resistance must be documented at breast cancer diagnosis and used to further direct diabetes management in these patients. We hypothesize that pharmacotherapy lowering insulin levels will decrease this risk of cancer recurrence and improve overall survival in this patient population. Findings consistent with this hypothesis will have direct and immediate applicability in breast cancer care. Screening and clinical intervention can be easily implemented for improved patient outcomes.

Kluger Yuval, PhD, New York University School of Medicine, "A Quantitative Immunofluorescence-Based approach to the Classification of Intermediate Recurrence Risk Early Stage Breast Cancer Patients10/01/10 - 9/30/12, $339,336.

Advances in chemotherapy have resulted in increased survival for early stage breast cancer. However, not all patients actually need chemotherapy, and the majority are cured with surgery, radiation and anti-hormonal therapy. Tests using tumor-based biomarkers have recently been incorporated into clinical care, geared towards identifying patients who do not need chemotherapy.

The most commonly used test is called oncotype DXTM, which is highly useful, but is technically complicated, and cannot be done in routine pathology laboratories. It divides patients into "low", "intermediate" and "high" risk groups for developing metastatic disease. Typically the low risk group does not get chemotherapy, whereas the high risk does. The intermediate group (over 40%) has questionable benefit from this test. If these patients could be reclassified to low or high risk using additional biomarkers, it would eliminate the need for chemotherapy for thousands of patients reassigned to the low risk group, while selectively administering chemotherapy to those whose disease is more likely to recur.

Investigators hypothesize that a similar assay, using different technology that is easier to apply in routine laboratories, can provide equal prognostic ability and that a modified test incorporating additional biomarkers will enable them to reassign patients in the intermediate group to high and low risk categories.

A new method of quantitative immunofluorescence developed by collaborators at Yale to study tumors from three cohorts of patients treated at Yale and NYU will be used.

Mark Robson, PhD, Sloan-Kettering Institute for Cancer Research, "Optimal Timing of Genetic Testing for Women with Newly Diagnosed Breast Cancer," 10/01/10 – 9/30/12, $314,971.

Women with breast cancer due to mutations in genes known as BRCA1 or BRCA2 are at increased risk of developing a second primary cancer in the opposite breast. Newly diagnosed women may undergo immediate genetic testing to inform a decision about whether or not to undergo prophylactic mastectomy (PM) to address this risk. A concern is that women may be highly distressed by their recent cancer diagnosis, which may interfere with their ability to make a decision about genetic testing that is most in keeping with their long-term preferences. We hypothesize that women who are experiencing high levels of distress about their diagnosis will be more likely to defer testing. We further hypothesize that there will a subset of women who choose pre-surgical testing and later regret the decision.

We will offer newly diagnosed young women the opportunity to have immediate testing (with results available before their breast surgery) or delayed testing after surgery. The study will assess participants' general and cancer-specific distress, attentional style, choice preference and decisional conflict with respect to genetic testing, observe their choices about testing and prophylactic surgery, and determine their level of regret with respect to those decisions at 6 and 12 month time points.

The results of this research will determine the safety of offering women genetic testing for BRCA mutations at the time of their initial breast cancer diagnosis. It will also provide invaluable guidance to clinicians as to which patients are at greatest risk for regret with respect to the decisions about testing and preventive surgery.

Herbert Samuels, PhD, New York University School of Medicine, "Targeting a Novel Pathway That Selectively Modulates Apoptosis of Breast Cancer Cells," 10/01/10 – 9/30/12, $360,000.

Investigators have identified a novel pathway which can specifically lead to the death of breast cancer cells. Previously, they cloned and identified a factor (NRIF3) which, when expressed in breast cancer cells, rapidly kills the cells through a process referred to as apoptosis or programmed cell death. The region of NRIF3 that mediates cell killing is a short 30 amino acid sequence, called

"Death Domain-1" or DD1. Recently the researchers also identified a protein DD1-Interacting Factor-1 (DIF-1) in breast cancer cells that binds DD1.

Findings thus far suggest that DIF-1 selectively represses one or more genes in breast cancer cells that lead to apoptosis when they are expressed. Studies also demonstrate the feasibility of selectively inducing cytotoxicity, suggesting that breast cancer cells contain a novel "death switch" involving the DIF-1 pathway that can be specifically triggered by NRIF3 or DD1.

The researchers propose further studies to understand the function and protein components of DIF-1, which may lead to the development of novel and more selective therapeutics against breast cancer.

Jose Silva, PhD, Columbia University, "Functional Genomics Studies To Uncover Novel Anticancer Therapies," 10/01/10 – 9/30/12, $360,000.

Cancer therapy has radically changed during the last decade. Novel therapies based on the specific molecular changes that drive tumorigenesis in every patient are emerging as low toxic and more efficient alternatives to classical treatments. However, even these ideal tailored therapies fail to provide a long-term cure and can only delay the progression of the disease.

An alternative promising approach is the use of genetic synthetic lethal interactions. These occur when two genetic alterations that are individually innocuous appear in the same cell causing growth inhibition. This concept can be exploited to identify genes that, when inhibited, reduce exclusively the viability of tumor cells that carry a preexisting genetic lesion.

Although synthetic lethality has always been proposed as an attractive anticancer approach with proven success, identification of these genetic interactions has remained elusive mainly because of the lack of proper genetic tools. However, at present, RNA interference (RNAi) technology has emerged as a very powerful approach to attenuate the expression of any chosen gene. The investigators propose using RNAi to identify genes that, when attenuated, exclusively reduce the viability of tumor cells carrying specific genetic lesions without affecting normal ones.

The successful completion of this research plan will provide us with novel targets for more efficient and less harmful breast cancer therapies and it may impact the design of future generation of cancer treatments.

Ping Tang, PhD, University of Rochester, "Predicting Bone Metastasis of Breast Cancer," 10/01/10 – 9/30/12, $360,000.

Breast carcinoma is the most common malignancy in women, with over one million new cases diagnosed each year worldwide, and one fifth of them in the United States. Bone metastasis is the most common systematic failure in breast cancer patients. It indicates the disease has entered an incurable stage and impacts patients' quality of life significantly.

Investigators propose to identify breast carcinomas with bone metastasis, lymph node metastasis, visceral organ metastasis, or without any type of metastasis, compare their differential expression patterns of key molecules in breast carcinogenesis and bone metastasis, and seek to identify any patterns that predict high risk for bone metastasis by routine immunohistochemical (IHC) analysis.

Most of the studies so far use either single IHC marker analysis, which is not powerful enough for accurate prediction, or multigene analysis that requires costly and complicated technology on fresh/frozen tissue, which usually is not available clinically. This project proposes to use formalin-fixed paraffin-embedded tissue, which is readily available in most laboratories, to study the IHC expression pattern(s) of a limited number of key molecules in a systematic fashion in order to identify a predictive pattern(s) that will be readily applicable for clinical application.

A more accurate prediction of the subgroup of patients with high risk for bone metastasis would result in more focused surveillance, effective prophylaxis, and early treatment to improve survival and quality of life in this subgroup of breast cancer patients.

2009 Patricia S. Brown Community-Based Organization Education Demonstration Project Awards

The 2009 Patricia S. Brown Community-Based Organization (CBO) Education Demonstration Projects RFA sought applications from CBOs in collaboration with researchers from accredited academic institutions, including medical centers, medical schools, teaching hospitals, universities and schools of public health, for planning and assessment of new breast cancer education programs and materials. It is intended that collaborations among CBOs and academic institutions fostered by this funding program will lead to education projects that are: 1) appropriate to communities; 2) medically and scientifically accurate; and 3) demonstrably effective in increasing knowledge and promoting healthy behaviors.

The goals of this funding mechanism are to:

- increase knowledge levels concerning the causation and natural history of breast cancer;
- develop more effective two-way communication between patients and medical practitioners about breast cancer and patient concerns;
- produce more effective and sensitive educational practices among medical practitioners;
- produce medically and scientifically accurate educational programs and materials that can be shown, with evaluation results, to be effective in increasing knowledge and promoting behaviors; and
- disseminate programs that work to other communities

There was one successful applicant for the 2009 competition for this funding.

Overview of Brown Research Application

Margaret L. Roberts, Capital Region Action Against Breast Cancer – CRAAB!, “Risk Factors for Breast Cancer,” 10/01/10 – 9/30/12, $149,942.

“Risk Factors for Breast Cancer” will educate college students, including medical and nursing students, as well as community residents about modifiable risk factors, so they may learn how to possibly lower their risk for disease and learn how to think critically about evidence-based health information.

Most people are not aware that only 5-10% of breast cancer cases are attributable to *known* genetic factors, and that 70-80% of women who are diagnosed have no family history of the disease. Currently, scientists do not know exactly what contributes to nearly 50% of breast cancers, but recent research has revealed new evidence of modifiable factors that could potentially reduce one's risk for breast cancer. These factors, which involve nutrition, exercise and environmental exposures, are related to the generally accepted theory behind many of the established risk factors – that estrogen fuels breast cancer and that increased exposure to estrogen over one's lifetime increases one's risk for the disease.

Innovative elements include developing and delivering new education materials, including presentations, brochures and website applications, in collaboration with several colleges and medical and nursing students; educating present and future health-care professionals; investigating whether different materials are needed for lay people and science students; and training medical students to present the materials to underserved populations in Area Health Education Centers in upstate NY. Materials will be delivered to approximately 500 people, including 300 students and four community groups. Another 5,000 people will receive brochures at health fairs and other events, and thousands more will view website programs.

After the materials are assessed for effectiveness through analysis of data collected on pre- and post-presentation questionnaires, and interviews with college professors and physicians, they will be revised and produced for use at other educational institutions, medical centers and community organizations throughout New York State.

Peter T. Rowley Breast Cancer Research Project Awards RFA- 2010

At its May 17, 2010 meeting, the Board's Committee on Program Needs and Effectiveness concluded that Postdoctoral Fellowship Awards had been an ineffective funding mechanism to promote breast cancer research in New York State. To promote good stewardship of Breast Cancer Research and Education Fund resources, the Committee recommended that the Board discontinue the Postdoctoral Fellowship Awards beginning in 2010. At its June 4, 2010 the Board agreed and approved the issuance of the Peter T. Rowley Breast Cancer Research Project Awards RFA without the Postdoctoral Fellowship Award component.

Program Outreach and Visibility

The HRSB/Program website at: http://www.wadsworth.org/breastcancer has been improved to make it more descriptive and easier to search. Updated reference materials have been placed on the web to assist researchers and administrators with contract compliance, progress reporting and fiscal management.

An e-Alert feature allows interested parties to receive notification of Board activities such as RFA issuances, event announcements, news releases and funds awarded. This enhanced communication tool for potential applicant, contractors and the general public is expected to increase interest in, support for and visibility of, the program.

During 2010, program staff conducted outreach to more than 100 academic institutions within New York State to promote awareness of the program through e-Alert subscriptions. This effort resulted in nearly 130 new subscribers, an increase of 134%. The Board and program staff anticipate much greater visibility of the Board and its activities in the future.

On October 6, 2010, the Department of Health Commissioner, Richard F. Daines, MD, issued a press release urging women to get screened for breast cancer and notifying readers about the New York State Breast Cancer Research and Education Fund.

Peer Review

The Department of Health selected a contractor to manage the independent scientific and technical merit peer-review process for evaluating applications for funding. The external peer-review process is intended to:

- remove Board and staff members from the peer review process, reducing the perception of possible conflicts of interest;
- obtain the highest quality review of applications;
- allow independent peer reviews in a timely manner by expert scientists, clinicians, educators and advocates; and
- allow staff to focus on program development and management.

Pesticide-Related Activities

Pesticide Data Collection and Access

Confidential information from the Pesticide Use and Sales Database (also known as the Pesticide Registry) collected by the DEC and pesticide application information maintained by private applicators are, with certain restrictions, available to scientists involved in human health-related research. Any information, such as name and address, which could identify a commercial or private applicator, including a farmer, or anyone who receives the services of a commercial applicator is considered confidential. Researchers seeking confidential pesticide registry information or pesticide application information can access pertinent documents at http://www.health.state.ny.us/environmental/pesticide/reporting/ or by contacting the DOH toll-free at 1(800) 458-1158, extension 2-7950. The following researcher access documents will be provided: Request for Pesticide Registry or Pesticide Application Information; Guidelines to Restrict the Dissemination by Researchers of Confidential Pesticide Registry and Pesticide Application Information; Agreement to Maintain Confidentiality; and an information sheet that summarizes these documents in lay language.

Evaluation of the Basis, Efficiency and Scientific Utility of the Information Derived From Pesticide Reporting

The statute requires that this report include, "…an evaluation… of the basis, efficiency and scientific utility of the information derived from pesticide reporting," as well as recommendations as to, "…whether such system should be modified or continued." In July 2008, an online survey was used to solicit comments on the benefits of enhancements to the Pesticide Sales and Use Reporting Website. An outreach letter describing the enhancements and the availability of the survey form online was distributed by mail and e-mail to approximately 575 interested parties. Only two responses were received to the online survey. Although both respondents indicated that they had accessed the enhancements and found them helpful, with only two responses and few comments, the survey did not yield meaningful information.

In 2010, three methods were used to conduct an assessment of how New York's pesticide sales and use data were being used: solicitation of comments and recommendations from stakeholders; contact with other states with pesticide reporting programs to find out if they had used New York's data; and a literature search for publications referring to New York's data was conducted.

Solicited comments. At its June 2010 meeting, the Board decided to solicit comments on the pesticide sales and use database from the widest possible audience, with emphasis on targeting researchers to determine the level of interest in using the pesticide data in human health-related research. The format of a Request for Information (RFI) was chosen because of its familiarity to researchers and because this format had not been used previously by the Board to solicit comments. The RFI (http://www.health.state.ny.us/funding/rfi/1008160333/index.htm) was issued on September 22, 2010 on the NYSDOH Wadsworth web site to determine who is using the pesticide data, how the data are being used, what specific data fields are being used, and to solicit other comments and recommendations regarding the database. The RFI was published in the New York State Register, the Contract Reporter, and the Environmental Notice Bulletin. An announcement about the RFI was posted on the NYSDOH Center for Environmental Health web site (http://www.health.state.ny.us/environmental/pesticide/reporting/). E-mail notifications linking to the RFI were sent to approximately 700 parties. Recipients included Wadsworth's HRSB E-alert distribution list of past and present contractors, administrators and researchers at relevant academic institutions, and other interested parties, as well as a combined NYSDEC/NYSDOH list of pesticide contacts, including relevant associations, additional academic departments, and people who have requested, used, inquired about, or commented on the data.

Two responses were received by the due date of October 15, 2010; one from a government agency and the other from an environmental engineering group within an academic institution. Both respondents had extensive experience with the pesticide data and had used both the publicly available data and the confidential pesticide data for human health-related research.

Use of the publicly available data. The academic engineering group uses the public pesticide sales and use data to plan ground water sampling and interpret sampling results by mapping and tabulating the data and combining it with other factors such as land use and aquifer vulnerability. The government agency uses the public pesticide data to develop indicators of local use of different types and classes of pesticides. The data are used to inform interested parties about these uses and trends over time/place through presentations, a web site, and publications. The data are also used in developing pesticide policy with the goal of reducing exposure to chemicals that may be health hazards.

In regard to specific data fields, both respondents use the EPA registration number, active ingredient, quantity applied, year of application, and county/zip code of application and responded that these fields are very important or important. In response to questions on frequency and timing of data use, the academic engineering group stated that they use the public data several times per year, with the latest use in September 2010. The government agency respondent has connected the public pesticide data to product registration information; their latest use was in October 2010.

Use of the confidential data for human health-related research. The academic engineering group has applied for and received confidential pesticide data for three studies relating to surveying upstate New York well water for pesticide contamination that may lead to human exposure. The application process for the confidential data includes review by the Committee on Access to Pesticide Registry and Pesticide Application Information, which makes a recommendation to the Board. The Board makes a decision on the application at its next scheduled meeting. This respondent stated that the length of time it took to receive the confidential data was excessive for

their purposes, even though the process was shortened for later applications, and the confidential data provide only a small extra utility over the public data.

The government agency respondent applied for and received confidential pesticide data for use in a study of the association between commercial application of pesticides in residential areas and birth outcomes in New York City. The study began with a validation sub-study to assess the validity of using the commercial pesticide application data to predict maternal exposures. This respondent stated that preliminary results suggest that the pesticide data predict exposures but only crudely, and that there are limitations on the usefulness of the data for human health-related research, some of which may derive from incomplete or inaccurate reporting.

Future plans regarding the confidential data. The academic engineering respondents stated that they are not planning to apply for confidential data for human health-related research in the near future for the reasons stated above, unless they decide to conduct a study requiring finer resolution data. However, since New York's pesticide reporting does not include private agricultural application, the usefulness of the data for identifying areas for ground water monitoring is limited.

The government agency respondent is not planning to submit another health-related research proposal, but may wish to request additional years of data.

How the data could be made more useful. Both respondents commented that they would like to see public data more recent than 2005, which was the last year available as of October 2010. For the government agency respondent, more recent data are important for evaluating trends in pesticide use and the impacts of policy efforts. For the academic engineering group, knowledge of recent usage may be important for sampling shallow wells, since these wells may be affected by recent pesticide usage.

In addition, the government agency respondent stated that the following would increase the usefulness of the data to their program:

- ability to use the confidential data for surveillance and not only health-related research;
- a public use, de-identified, line-item dataset of application data including zip code, county, and date of application; addition of fields to the current public dataset (counts of applications, summary statistics, license type);
- collection of dosage rate and target organism; and portals to the data with links to pesticide information web sites.

This group also stated that mandating electronic reporting would increase the quality of the data and made suggestions for data-cleaning methods and changes to web-based reports. Some of these comments have been made in previous surveys and can be found in the appendices of the Board's biennial reports. Some of the actions mentioned would require a change in the pesticide reporting legislation.

Conclusions from RFI. With only two responses to the RFI, it appears that there is little general interest in the pesticide sales and use database among the stakeholder groups contacted. This extremely low response rate is similar to that seen with the interactive survey conducted in 2008. After modifications and improvements were made to the pesticide sales and use database web site; only two responses were received to that survey as well. Two earlier surveys in 2000 and 2002-03 each had a response rate of 8%, which was also low, but considerably higher than the response to the current RFI.

From the two responses received, it appears that the public summary data can be useful for ground water monitoring and pesticide use surveillance. These uses of the data were also mentioned in earlier surveys by other respondents. Since 2000, there have only been five applications from two groups for the confidential pesticide data, showing that there is not widespread interest in the use of the confidential data for human health-related research. In addition, there are limitations to the pesticide data for use in human health-related research, as pointed out by the two groups that have used the confidential data in research studies.

Survey of other states. Other states with pesticide reporting activities were contacted in early 2010 to determine if they had ever used New York state data. The states of Arizona, California, New Hampshire, New Jersey, and Minnesota collect pesticide sales or use data. Telephone calls were made to the agency responsible for collection of pesticide data, as noted on each state's website. A staff person familiar with the program was asked if he or she were aware of New York's program and if New York's data had ever been used. Agency representatives in California, New Hampshire, New Jersey, and Minnesota were aware of New York's program but had never reviewed New York's data because they had never had the need to. The staff person in Arizona was not aware of New York's program. One person from California and another from Minnesota expressed an interest in looking at New York's website, and links to the DEC and Cornell web sites were forwarded. Wisconsin and Oregon, two states that have been discussed previously, no longer have pesticide reporting programs. In conclusion, it appears that other states with pesticide reporting activities are for the most part aware of New York's pesticide data, but these states are not using New York's data.

Literature search for publications referring to New York data. A literature search was conducted during 2010 for reports on studies that used or referred to New York's pesticide sales and use data. Three research studies were found that meet these criteria and were published between 2008 and 2010. In addition, Dr. Tammo Steenhuis from Cornell University's Department of Biological and Environmental Engineering issued a report on the second year's study of well water in upstate New York for pesticide contamination. Dr. Steenhuis applied for and received confidential pesticide sales and use data for this study. The report and papers are listed below. At the Board's recommendation, a similar list has been included in biennial reports since 2004.

Report Issued from Users of the Database

Steenhuis T, Richards B, Walter MT, Toevs I, Salvucci A, Pacenka S, Porter K, Porter MJ, Tsoi S and Mosher D. "Surveying Upstate NY Well Water for Pesticide Contamination – Year 2 Final Report to the New York State Department of Environmental Conservation," October 2009.

Research Studies Referring to the Database

Williams MK, Rundle A, Holmes D, Reyes M, Hoepner LA, Barr DB, Camann DE, Perera FP and Whyatt RM. "Changes in Pest Infestation Levels, Self-Reported Pesticide Use, and Permethrin Exposure During Pregnancy After the 2000-2001 U.S. Environmental Protection Agency Restriction of Organophosphates." Environ Health Perspect. 2008;116(12):1681-8. Epub 2008 Aug 15.

Whyatt RM, Garfinkel R, Hoepner LA, Andrews H, Holmes D, Williams MK, Reyes A, Diaz D, Perera FP, Camann DE and Barr DB. "A Biomarker Validation Study of Prenatal Chlorpyrifos Exposure Within an Inner-City Cohort During Pregnancy." Environ Health Perspect. 2009;117(4):559-67. Epub 2008 Dec 5.

Horton MK, Jacobson JB, McKelvey W, Holmes D, Fincher B, Quantano A, Diaz BP, Shabbazz F, Shepard P, Rundle A and Whyatt RM. "Characterization of Residential Pest Control Products Used in Inner City Communities in New York City." Expo Sci Environ Epidemiol. 2010 Jun 16. [Epub ahead of print].

Conclusions and Board Recommendations

Response to the RFI indicated that there is little general interest in the pesticide sales and use data among the stakeholder groups contacted, but that the public pesticide data have some utility for pesticide surveillance and the targeting of ground water monitoring for pesticides. The response also showed that there is very limited interest in the confidential pesticide data for human-health related research and that there are limitations to the data for this purpose. The survey of other states with pesticide reporting activities showed that other states do not appear to be using New York's pesticide data. Published reports mentioning the pesticide database support the finding that the public data may be useful for pesticide surveillance.

NYSDEC, in its report to the Board, discussed funding cuts to the pesticide program and the resulting decrease in staff. The program is looking closely at cost-saving measures, including changes to the way data are collected and processed.

Based on the results of the RFI, the Board makes the following recommendations:

1) NYSDEC's main focus in this area should continue to be producing the public data summaries in as timely a manner as possible and with attention to improving the accuracy and timeliness of the data.

2) The Legislature should consider no longer requiring the reporting of specific date and street address of each pesticide application (the confidential portion of the pesticide data), which is only available, under certain conditions, to researchers engaged in human health-related research.

3) As resources allow, NYSDEC should consider whether additional information can be added to the public dataset.

Consideration of the Collection of Residential Pesticide Use Data

The statute also instructs the Board to consider, "… whether private citizen use of residential pesticides should be added to the reporting requirements."

On March 6, 2009, Dr. Nancy Kim provided a draft report to the Board regarding Oregon's experience collecting household pesticide use data. Oregon's pesticide reporting law is the only one in the United States to include a mechanism to identify household use. The Oregon Department of Agriculture hired a marketing firm to obtain pesticide use diaries from residents of the state. The firm made 12,000 telephone calls to obtain completed 3-month diaries from 0.075% of the households in the state. It was determined that the information obtained was not adequate to calculate the amount of active pesticide ingredients used. Given the poor quality of the information obtained from the survey and the state's budget problems, Oregon decided not to continue the household pesticide survey in 2008. In addition, funding was not provided for the non-household portion of the Oregon pesticide reporting program for 2009-2011 and the state law was amended so that pesticide reporting is not required for those years (http://www.oregon.gov/ODA/PEST/purs_index.shtml). Two annual reports on the Oregon household use survey are available at:

Pesticide Use Reporting System: 2006 Amended Annual Report (http://www.oregon.gov/ODA/PEST/docs/pdf/pursreportweb2006.pdf) and *Pesticide Use Reporting System: 2007 Annual Report* (http://www.oregon.gov/ODA/PEST/docs/pdf/pursreportweb2007.pdf).

The Board discussed the results of the Oregon household use survey, the poor quality of the information collected, the relatively larger population of New York State, and their concern about low response rates to health surveys in New York. The Board concluded that the information from Oregon on collection of household pesticide use data did not support including these data in New York's reporting requirements at this time.

The report was revised to include a summary of the Board's discussion and was approved by the Board at its June 5, 2009 meeting. The report is provided in Appendix XI.

Board Reports on Pesticide-Related Topics and on Studies Using or Referring to the Pesticide Sales and Use Database

The Board has released the following reports on pesticide-related topics since its inception. The Legislative mandates for the reports are noted in parentheses:

- Data Sets Collected and Maintained by New York State Government that May Assist Researchers Engaged in Breast, Prostate or Testicular Cancer Research, January 1999 [Public Health Law Section 2412(a) and (b)]

- Pesticide Use and Pesticide Exposure, May 1999 [Public Health Law §2411(1)(f)]

- Reference List: Pesticide Use and Pesticide Exposure, May 1999 [Public Health Law §2411(1)(f)]

- Reference List: Pesticide Use and Pesticide Exposure, September 2002 [Public Health Law §2411(1)(f)]

- Comparison of Pesticide Reporting and Pesticide Use, February 2000 [Public Health Law §2411(1)(g)]

- Survey Results and Recommendations – Pesticide Reporting Law, February 2001 [Public Health Law §2413]

- Results of the 2002-2003 Survey on Pesticide Reporting and Board Recommendations, March 2005 [Public Health Law §2413]

Copies of these reports or information about the Board's pesticide-related activities may be obtained by calling the DOH toll-free at 1(800) 458-1158, extension 2-7950.

Appendix XII includes the Board's recommendations on pesticide reporting based on surveys of interested parties and recommendations provided by users of the data through 2010. Summaries of progress achieved to date are also included.

VI. CONCLUSION

A number of exciting scientific and education breast cancer research projects are underway, supported by the Breast Cancer Research and Education Fund. The Board is grateful for taxpayer gifts and the State matching of these gifts that enables the Board to facilitate advances in the fight against breast cancer.

Stabilization of the Board and its research and education programs that took place during 2009-2010 allows the Board to project that DOH will be able to issue a scientific research and an education research RFA annually. Issuance of RFAs at the same time each year is planned for consistent expenditures of the Breast Cancer Research and Education Fund. Standardized issuance of RFAs will also provide successful applicants with consistent contract start dates for ease of management of their laboratories, programs, resources and funds.

The Board looks forward to continued progress and success in achieving its mandates to support critical research and education projects while simultaneously stimulating economic development within New York.

Appendices I - XII

APPENDIX I

PUBLIC HEALTH LAW

ARTICLE 24, TITLE 1-B
HEALTH RESEARCH SCIENCE BOARD

As amended by Chapter 32 of the Laws of New York, 2008

§ 2410. Health research science board.
1. There is hereby established in the department the health research science board. The board shall be comprised of seventeen voting members, three non-voting regional members and three non-voting ex-officio members as follows:

(a) twelve voting members shall be scientists each of whom shall have either an M.D., D.O., Ph.D., or Dr.P.H. in one of the following fields: biochemistry, biology, biostatistics, chemistry, epidemiology, genetics, immunology, medicine, microbiology, molecular biology, nutrition, oncology, reproductive endocrinology, or toxicology and must currently be engaged in treating patients or conducting health research. Such members shall be appointed in the following manner: two shall be appointed by the temporary president of the senate and one by the minority leader of the senate; two shall be appointed by the speaker of the assembly and one by the minority leader of the assembly; six shall be appointed by the governor;

(b) the governor shall appoint six regional members, three of whom shall serve as full voting members and three of whom shall serve as alternative members without voting rights. Such regional members shall be persons who have or have had breast cancer, and shall be actively involved with a community-based, grass-roots breast cancer organization. Two of such appointments shall be made upon the recommendation of the temporary president of the senate and two shall be made upon the recommendation of the speaker of the assembly. One regional member shall be appointed from each of the following geographic areas of the state: Long Island, New York City, the Hudson Valley, Northern New York, Central New York and Western New York. The order of appointments and recommendations for appointments and voting rights shall rotate as follows:

i) The governor shall appoint regional members for three year terms in the following order:
- (A) Long Island, which member shall have voting rights,
- (B) Central New York, which member shall not have voting rights,
- (C) Hudson Valley, which member shall have voting rights,
- (D) Northern New York, which member shall not have voting rights,
- (E) Western New York, which member shall have voting rights, and
- (F) New York City, which member shall not have voting rights;

(ii) The governor, upon the recommendation of the temporary president of the senate, shall appoint regional members for three year terms in the following order:
- (A) Hudson Valley, which member shall not have voting rights,
- (B) Northern New York, which member shall have voting rights,

(C) Western New York, which member shall not have voting rights,
(D) New York City, which member shall have voting rights,
(E) Long Island, which member shall have voting rights, and
(F) Central New York, which member shall not have voting rights; and

(iii) The governor, upon the recommendation of the speaker of the assembly, shall appoint regional members for three year terms in the following order:
(A) Western New York, which member shall have voting rights,
(B) New York City, which member shall not have voting rights,
(C) Long Island, which member shall not have voting rights,
(D) Central New York, which member shall have voting rights,
(E) Hudson Valley, which member shall not have voting rights, and
(F) Northern New York, which member shall have voting rights;

(c) The governor shall appoint three non-voting ex officio members to the board, one of whom shall be the commissioner, or his or her designee, one of whom shall be the commissioner of environmental conservation, or his or her designee, and one of whom shall be the director of the Cornell University Institute for Comparative and Environmental Toxicology, or his or her designee; and

(d) The governor shall appoint one voting member who shall be a person who has or has survived breast cancer and one voting member who shall be a person who has or has survived prostate or testicular cancer. The governor shall designate the chair of the board. The governor, temporary president of the senate, minority leader of the senate, speaker of the assembly, and minority leader of the assembly may solicit recommendations from the Centers for Disease Control and Prevention, the National Institutes of Health, the Federal Agency For Health Care Policy and Research, and the National Academy of Sciences for appointments or recommendations for appointments to the board.

2. All members shall serve for terms of three years and may be reappointed, such terms to commence July first and expire June thirtieth; provided, however, that of the scientific members first appointed, three such members, one appointed by the governor, one appointed by the temporary president of the senate and one appointed by the speaker of the assembly, shall be appointed for terms of one year, and three such members, one appointed by the governor, one appointed by the temporary president of the senate, and one appointed by the speaker of the assembly shall be appointed for a term of two years.

The board shall convene on or before September first, nineteen hundred ninety-seven.

3. Any member, after notice and an opportunity to be heard, may be removed by the governor for neglect of duty or malfeasance in office. Any member who fails to attend three consecutive meetings of the board, unless excused by formal vote of the board, shall be deemed to have vacated his or her position.

4. Any vacancy in the board shall be filled for the unexpired term in the same manner as the original appointment.

5. A majority of the voting members of the board shall constitute a quorum for the transaction of any business or the exercise of any power or function of the board.

6. Members of the board shall not receive compensation for their services as members, but shall be allowed their actual and necessary expenses incurred in the performance of their duties.

7. For the purposes of this section the following counties shall constitute the following geographic areas:
(a) Long Island: the counties of Nassau and Suffolk.
(b) New York City: the counties of Kings, Queens, Richmond, New York and Bronx.
(c) Hudson Valley: the counties of Westchester, Rockland, Putnam, Orange, Dutchess, Ulster, Greene, Columbia, Sullivan and Delaware.
(d) Northern New York: the counties of Albany, Clinton, Essex, Franklin, Fulton, Herkimer, Hamilton, Montgomery, Otsego, Rensselaer, Saratoga, Schenectady, Schoharie, Warren and Washington.
(e) Central New York: the counties of Broome, Cayuga, Chemung, Chenango, Cortland, Jefferson, Lewis, Madison, Oneida, Onondaga, Oswego, Seneca, Schuyler, St. Lawrence, Tioga, Tompkins and Wayne.
(f) Western New York: the counties of Allegany, Cattaraugus, Chautauqua, Erie, Genesee, Niagara, Orleans, Wyoming, Livingston, Monroe, Ontario, Steuben and Yates.

§ 2411. Powers and duties of the board.
1. The board shall:
(a) Survey state agencies, boards, programs and other state governmental entities to assess what, if any, relevant data has been or is being collected which may be of use to researchers engaged in breast, prostate or testicular cancer research;

(b) Consistent with the survey conducted pursuant to paragraph (a) of this subdivision, compile a list of data collected by state agencies which may be of assistance to researchers engaged in breast, prostate or testicular cancer research as established in section twenty-four hundred twelve of this title;

(c) Consult with the Centers for Disease Control and Prevention, the National Institutes of Health, the Federal Agency For Health Care Policy and Research, the National Academy of Sciences and other organizations or entities which may be involved in cancer research to solicit both information regarding breast, prostate and testicular cancer research projects that are currently being conducted and recommendations for future research projects;

(d) Review requests made to the commissioner for access to information pursuant to paragraph b of subdivision one of section 33-1203 and paragraph c of subdivision two of section 33-1205 of the environmental conservation law for use in human health related research projects. Such data shall only be provided to researchers engaged in human health related research. The request made by such researchers shall include a copy of the research proposal or the research protocol approved by their institution and copies of their institution's Institutional Review Board (IRB) or equivalent review board approval of such proposal or protocol. In the case of research conducted outside the auspices of an institution by a researcher previously published in a peer-reviewed scientific journal, the board shall request copies of the research proposal and shall deny access to the site-specific and nine-digit zip code pesticide data if the board determines that such proposal does not follow accepted scientific practice for the design of a research project. The board shall establish guidelines to restrict the dissemination by researchers of the name, address or other information that would otherwise identify a commercial applicator or private applicator or any person who receives the services of a commercial applicator;

(e) Solicit, receive, and review applications from public and private agencies and organizations and qualified research institutions for grants from the breast cancer research and education fund, created pursuant to section ninety-seven-yy of the state finance law, to conduct research or

educational programs which focus on the causes, prevention, screening, treatment and cure of breast cancer and may include, but are not limited to basic, behavioral, clinical, demographic, environmental, epidemiologic and psychosocial research. The board shall make recommendations to the commissioner, and the commissioner shall, in his or her discretion, grant approval of applications for grants from those applications recommended by the board. The board shall consult with the Centers for Disease Control and Prevention, the National Institutes of Health, the Federal Agency For Health Care Policy and Research, the National Academy of Sciences, breast cancer advocacy groups, and other organizations or entities which may be involved in breast cancer research to solicit both information regarding breast cancer research projects that are currently being conducted and recommendations for future research projects. As used in this section, "qualified research institution" may include academic medical institutions, state or local government agencies, public or private organizations within this state, and any other institution approved by the department, which is conducting a breast cancer research project or educational program. If a board member submits an application for a grant from the breast cancer research and education fund, he or she shall be prohibited from reviewing and making a recommendation on the application;

(f) Consider, based on evolving scientific evidence, whether a correlation exists between pesticide use and pesticide exposure. As part of such consideration the board shall make recommendations as to methodologies which may be utilized to establish such correlation;

(g) After two years of implementation of pesticide reporting pursuant to section 33-1205 of the environmental conservation law, the board shall compare the percentage of agricultural crop production general use pesticides being reported to the total amount of such pesticides being used in this state as estimated by Cornell University, Cornell Cooperative Extension, the department of environmental conservation, and the Environmental Protection Agency;

(h) Meet at least six times in the first year, at the request of the chair and at any other time as the chair deems necessary. The board shall meet at least four times a year thereafter. Provided, however, that at least one such meeting a year shall be a public hearing, at which the general public may question and present information and comments to the board with respect to the operation of the health research science board, the breast cancer research and education fund, the prostate and testicular cancer research and education fund and pesticide reporting established pursuant to sections 33-1205 and 33-1207 of the environmental conservation law. At such hearing, the commissioner of the department of environmental conservation or his or her designee shall make a report to the board with respect to the efficiency and utility of pesticide reporting established pursuant to sections 33-1205 and 33-1207 of the environmental conservation law.

2. The commissioner shall request that the department of environmental conservation compile information pursuant to paragraph b of subdivision one of section 33-1203 of the environmental conservation law as necessary to fulfill board approved requests, pursuant to paragraph (d) of subdivision one of this section.

3. The commissioner shall provide the board with such staff assistance and support services as are necessary for the board to perform the functions required of it under this section.

§ 2412. Agency implementation. All state agencies, including, but not limited to, the departments of agriculture and markets, environmental conservation, and health, shall review their programs and operations (pursuant to guidelines established by the board) to determine whether they currently collect data which may be of use to researchers engaged in breast, prostate or testicular cancer research. Any agency collecting such data shall forward a description of the data to the health research science board.

§ 2413. Biennial report. The commissioner shall submit a report on or before January first commencing in nineteen hundred ninety-nine, and biennially thereafter, to the governor, the temporary president of the senate and the speaker of the assembly concerning the operation of the health research science board. Such report shall include recommendations from the health research science board including, but not limited to, the types of data that would be useful for breast, prostate or testicular cancer researchers and whether private citizen use of residential pesticides should be added to the reporting requirements. The report shall also include a summary of research requests granted or denied. In addition, such report shall include an evaluation by the commissioner, the commissioner of the department of environmental conservation and the health research science board of the basis, efficiency and scientific utility of the information derived from pesticide reporting pursuant to sections 33-1205 and 33-1207 of the environmental conservation law and recommend whether such system should be modified or continued. The report shall include a summary of the comments and recommendations presented by the public at the board's public hearings.

APPENDIX II

ENVIRONMENTAL CONSERVATION LAW
TITLE 7: REGISTRATION OF PESTICIDES
TITLE 12: PESTICIDE SALES AND USE DATA BASE AND RECORDKEEPING AND REPORTING

§ 33-0714. Water quality monitoring for pesticides.
The department, in coordination with the United States Geological Survey, National Water Quality Assessment Program, the New York State Water Resources Institute, and other parties, shall conduct a water quality monitoring program to provide an adequate understanding of the health and environmental impacts of pesticide use in the state. The department shall utilize this program, as it deems necessary, in: making pesticide registration decisions; reviewing suspensions and cancellations of pesticide registrations in the state; and assessing the status, trends, and health impacts of any pesticide contamination of ground and surface waters on Long Island and throughout the state.

§ 33-1201. Pesticide sales and use computer data base.
1. a. The department shall develop a pesticide sales and use computer data base in conjunction with Cornell University. The data base shall be maintained at the department.
b. Such data base shall consist of all information compiled from reports submitted to the department pursuant to sections 33-1205 and 33-1207 of this title. Such reports shall be entered into and maintained on a computerized data base and shall be updated annually. Information obtained for and contained in the data base shall be accessible by interested parties only to the extent permitted pursuant to the provisions of subdivision two of this section and paragraph a of subdivision 1 of section 33-1203 of this title.

2. The commissioner shall prepare an annual report summarizing pesticide sales, quantity of pesticides used, category of applicator and region of application. The commissioner shall not provide the name, address, or any other information which would otherwise identify a commercial or private applicator, or any person who sells or offers for sale restricted use or general use pesticides to a private applicator, or any person who received the services of a commercial applicator. In accordance with article six of the public officers law, proprietary information contained within such record, including price charged per product, shall not be disclosed. The report shall be submitted to the governor, the temporary president of the senate and the speaker of the assembly, and shall be made available to all interested parties. The first report shall be submitted on July first, nineteen hundred ninety-eight and on July first annually thereafter.

§ 33-1203. Access to pesticide information.
1. a. The commissioner shall, upon written request of an interested party, in printed form or on a diskette in computerized data base format, provide the information on pesticides submitted to the department pursuant to sections 33-1205 and 33-1207 of this title. Such information shall

be provided by county or counties, or five-digit zip code or codes as selected by the interested party making the written request. The commissioner shall not provide the name, address, or any other information which would otherwise identify a commercial or private applicator, or any person who sells or offers for sale restricted use or general use pesticides to a private applicator, or any person who received the services of a commercial applicator. In accordance with article six of the public officers law, proprietary information contained within such record, including price charged per product, shall not be disclosed. The provisions of this paragraph shall not apply to the provision of pesticide data to the commissioner of health, the health research science board and researchers pursuant to title one-B of article twenty-four of the public health law.

b. The department shall, upon request from the department of health, compile pesticide application information by nine-digit zip code and provide the information to the commissioner of health for researchers entitled to receive information pursuant to paragraph (d) of subdivision one of section twenty-four hundred eleven of the public health law provided, however, if the nine-digit zip code cannot be determined, the information shall be compiled by town or city.

2. The fees for copies of information shall not exceed twenty-five cents per photocopy not in excess of nine inches by fourteen inches, or the actual cost of reproducing any information.

§ 33-1205. Recordkeeping and reporting.

1. All commercial applicators shall maintain pesticide use records for each pesticide application containing the following:

a. EPA registration number;

b. product name;

c. quantity of each pesticide used;

d. date applied;

e. location of application by address (including five-digit zip code).

Such records shall be maintained for a period of not less than three years. All commercial applicators shall file, at least annually, a report or reports containing such information with the department on computer diskette or in printed form on or before February first for the prior calendar year. All commercial applicators shall also maintain corresponding records of the dosage rates, methods of application and target organisms for each pesticide application. These records shall be maintained on an annual basis and retained for a period of not less than three years and shall be available for inspection upon request by the department.

2. a. Every person who sells or offers for sale restricted use pesticides to private applicators shall issue a record to the private applicator of each sale of a restricted use pesticide or a general use pesticide used in agricultural crop production to such applicator. Such record of each sale shall include the following:

1. EPA registration number;

2. product name of the pesticide purchased;

3. quantity of the pesticide purchased;

4. date purchased;

5. location of intended application by address (including five-digit zip code) or if address is unavailable by town or city (including five-digit zip code) if the location of intended application differs from the billing address that appears on the record.

Every person who sells or offers for sale restricted use pesticides to private applicators shall file, at least annually, a report or reports containing such information with the department on computer diskette or in printed form on or before February first for the prior calendar year. The department shall not use the reports filed pursuant to this paragraph for enforcement purposes.

b. All private applicators shall maintain, at a minimum, records of the restricted pesticides purchased, crop treated by such, method of application, and date of application or applications.

This information shall be maintained on an annual basis and retained for a minimum of three years, and shall be available for inspection upon request by the department.

c. A private applicator shall, upon request, within six months, provide site-specific information relating to pesticide applications to any researcher entitled to receive information pursuant to paragraph (d) of subdivision one of section twenty-four hundred eleven of the public health law, provided, however, such request shall not be granted during planting and harvesting unless at a time and in a manner that is mutually convenient.

§ 33-1207. Recordkeeping and reporting by importers and manufacturers.

1. Each person manufacturing or compounding a registered restricted use pesticide in this state, or importing or causing a registered restricted use pesticide to be imported into this state for use, distribution, or storage, shall maintain records of all sales within the state during the preceding year of each restricted use pesticide product which he or she has imported, manufactured or compounded. The record of each restricted use pesticide product shall include:

a. EPA registration number;

b. container size; and

c. number of containers sold to New York purchasers.

2. Such records shall be maintained for a period of not less than three years. All manufacturers and importers shall file an annual report containing such information with the department on computer diskette or in printed form on or before February first for the prior calendar year.

APPENDIX III

STATE FINANCE LAW
ARTICLE 6

§ 97-yy. Breast cancer research and education fund.

1. There is hereby established in the joint custody of the commissioner of taxation and finance and the comptroller, a special fund to be known as the "breast cancer research and education fund".

2. Such fund shall consist of all revenues received by the department of taxation and finance, pursuant to the provisions of section two hundred nine-D and section six hundred twenty-seven of the tax law, all moneys collected pursuant to section four hundred four-q of the vehicle and traffic law, and all other moneys appropriated, credited, or transferred thereto from any other fund or source pursuant to law. For each state fiscal year, there shall be appropriated to the fund by the state, in addition to all other moneys required to be deposited into such fund, an amount equal to the amounts of monies collected and deposited into the fund pursuant to sections two hundred nine-D and six hundred twenty-seven of the tax law and section four hundred four-q of the vehicle and traffic law during the preceding calendar year, as certified by the comptroller. Nothing contained herein shall prevent the state from receiving grants, gifts or bequests for the purposes of the fund as defined in this section and depositing them into the fund according to law.

2-a. On or before the first day of February each year, the comptroller shall certify to the governor, temporary president of the senate, speaker of the assembly, chair of the senate finance committee and chair of the assembly ways and means committee, the amount of money deposited in the breast cancer research and education fund during the preceding calendar year as the result of revenue derived pursuant to sections two hundred nine-D and six hundred twenty-seven of the tax law and section four hundred four-q of the vehicle and traffic law.

3. Monies of the fund shall be expended only for breast cancer research and educational projects. As used in this section, "breast cancer research and education projects" means scientific research or educational projects which, pursuant to section two thousand four hundred eleven of the public health law, are approved by the department of health, upon the recommendation of the health research science board.

4. Monies shall be payable from the fund on the audit and warrant of the comptroller on vouchers approved and certified by the commissioner of health.

5. To the extent practicable, the commissioner of health shall ensure that all monies received during a fiscal year are expended prior to the end of that fiscal year.

APPENDIX IV

STATE TAX LAW
ARTICLE 9-A

§ 209-D. Gift for breast cancer research and education. Effective for any tax year commencing on or after January first, nineteen hundred ninety-six, a taxpayer in any taxable year may elect to contribute to the support of the breast cancer research and education fund. Such contribution shall be in any whole dollar amount and shall not reduce the amount of the state tax owed by such taxpayer. The commissioner shall include space on the corporate income tax return to enable a taxpayer to make such contribution. Notwithstanding any other provision of law, all revenues collected pursuant to this section shall be credited to the breast cancer research and education fund and shall be used only for those purposes enumerated in section ninety-seven-yy of the state finance law.

ARTICLE 22, PART 2

§ 627. Gift for breast cancer research and education. Effective for any tax year commencing on or after January first, nineteen hundred ninety-six, an individual in any taxable year may elect to contribute to the breast cancer research and education fund. Such contribution shall be in any whole dollar amount and shall not reduce the amount of state tax owed by such individual. The commissioner shall include space on the personal income tax return to enable a taxpayer to make such contribution. Notwithstanding any other provision of law all revenues collected pursuant to this section shall be credited to the breast cancer research and education fund and used only for those purposes enumerated in section ninety-seven-yy of the state finance law.

APPENDIX V

VEHICLE AND TRAFFIC LAW
TITLE 4, ARTICLE 14

* § 404-q. Distinctive "drive for the cure" license plates.
1. Any person residing in this state shall, upon request, be issued a distinctive "drive for the cure" license plate in support of breast, prostate and testicular cancer research bearing the phrase "drive for the cure". Application for said license plate shall be filed with the commissioner in such form and detail as the commissioner shall prescribe.

2. A distinctive "drive for the cure" license plate issued pursuant to this section shall be issued in the same manner as other number plates upon the payment of the regular registration fee prescribed by section four hundred one of this article, provided, however, that an additional annual service charge of twenty-five dollars shall be charged for such plate. Twelve dollars and fifty cents from each twenty-five dollars received as annual service charges under this section shall be deposited to the credit of the breast cancer research and education fund established pursuant to section ninety-seven-yy of the state finance law and shall be used for research and education programs undertaken pursuant to section twenty-four hundred ten of the public health law. Twelve dollars and fifty cents from each twenty-five dollars received as annual service charges under this section shall be deposited to the credit of the prostate and testicular cancer research and education fund established pursuant to section ninety-seven-ccc of the state finance law and shall be used for research and education programs undertaken pursuant to section ninety-seven-ccc of the state finance law. Provided, however that one year after the effective date of this section funds in the amount of six thousand dollars, or so much thereof as may be available, shall be allocated to the department to offset costs associated with the production of such license plates.

APPENDIX VI

HEALTH RESEARCH SCIENCE BOARD BYLAWS

I. CHAIRPERSON

The Chairperson of the Health Research Science Board ("Board") shall be designated by the Governor. The Chairperson shall perform the duties ordinarily associated with that office. The Chairperson shall have responsibility for the general supervision of the work of the Board. He or she shall have the power, unless the Board shall have provided for other representation, to represent the Board before the Governor, committees of the Legislature, or other public authorities, and may request any member or members to appear with him or her in his or her stead. The Chairperson shall preside at Board meetings. In the absence of the Chairperson from any meeting, the Board may elect one of its members to preside during such absence.

II. CODE OF ETHICS

Members of the Board shall comply with Section 74 (Code of Ethics) of the Public Officers Law. No member of the Board should have any interest, financial or otherwise, direct or indirect, or engage in any business, transaction, or professional activity, or incur any obligation of any nature, which is in substantial conflict with the proper discharge of his or her duties as a Board member. Members should exercise their duties and responsibilities as Board members in the public interest of the inhabitants of the State, regardless of their affiliation with, or relationship to, any facility, agency, program, activity, category of provider, or interest group. The principles that should guide the conduct of Board members include, but are not limited to, the following:

a) A Board member should endeavor to pursue a course of conduct that will not raise suspicion among the public that he or she is likely to be engaged in acts that are in violation of his or her trust as a Board member.

b) No Board member should permit his or her employment to impair his or her independence of judgment in the exercise of his or her duties as a Board member.

c) No Board member should disclose confidential information acquired by him or her in the course of his or her duties as a Board member, or by reason of his or her position as a Board member, nor use such information to further his or her personal interests.

d) No Board member should use, or attempt to use, his or her position as a Board member to secure unwarranted privileges or exemptions for himself or herself or others.

e) No Board member should engage in any transaction as a representative or agent of the State with any business entity in which he or she has a direct or indirect financial interest that might reasonably tend to conflict with the proper discharge of his or her duties as a Board member.

f) A Board member should refrain from making personal investments in enterprises which he or she has reason to believe may be directly involved in decisions to be made by him or her as a Board member or which will otherwise create substantial conflict between his or her duty as a Board member to act in the public interest and his or her private interest.

III. CONFLICT OF INTEREST

Section 1. Pending Applications and Requests. This section applies both to activities of the full Board and activities of committees of the Board.

a) **Absolute Disqualifications.** When a Board member, or a member of a committee who is not a Board member, submits an application for a grant from the Breast Cancer Research and Education Fund, under Section 2411(1)(e) of the Public Health Law, or a request for access to Pesticide Registry or pesticide application information, under Section 2411(1)(d) of the Public Health Law, or a Board member, or a member of a committee who is not a Board member, or his or her family has an interest, financial or otherwise, whether as owner, officer, director, fiduciary, employee, consultant or supplier of goods or services regarding a facility, agency or program or activity whose application for a grant from the Breast Cancer Research and Education Fund, under Section 2411(1)(e) of the Public Health Law, or whose request for access to Pesticide Registry or pesticide application information, under Section 2411(1)(d) of the Public Health Law, is before the Board or a committee of the Board for consideration or determination, that member shall (i) identify such interest to the Board or committee at any meeting when the application or request is to be considered, (ii) absent himself, or herself, from any portion of any meeting when such application or request is considered, and (iii) not participate in any vote of the Board or committee on such application or request. For purposes of this Article, "family" shall include a spouse, children and any relative living in the member's household.

b) **Disclosure and Possible Disqualification.** When a Board member, or a member of a committee who is not a Board member, or his or her family has (i) any of the above-noted interests in a facility, agency, program or activity, the status of which might reasonably be affected by another facility, agency, program or activity whose grant application or request for access to Pesticide Registry or pesticide application information is before the Board or a committee of the Board, or (ii) when a member has any other interest or association which might reasonably be construed as tending to embarrass the Board or elicit public suspicion that he or she might be engaged in acts in violation of his or her trust as a Board member, he or she shall, at the time of formal consideration of such application or request by the Board or committee, disclose such interest or association so that the Chairperson and, if necessary, the Board or committee can then determine whether his or her participation in the discussion of such application or request or the vote of the Board or committee thereon would be proper.

c) **Procedure.** After a motion is made concerning a grant application or request for access to Pesticide Registry or pesticide application information and prior to discussion or vote, and at the request of the Chairperson, the Board members and members of committees who are not Board members, shall disclose all actual or potential conflicts and, when appropriate, explain the conflicts. In the case of conflicts constituting Absolute Disqualifications, the members with such conflicts shall immediately leave the meeting and remain absent during the period when the application or request is under consideration. In the case of conflicts constituting Possible Disqualifications, the Chairperson shall rule upon such conflicts subject to appeal by motion to the Board or committee that may override the Chairperson's decision by the affirmative vote of a majority of those present, excluding those members who are the subject of the vote.

d) **Compliance with Public Officers Law.** Members of the Board shall comply with Sections 74 and 78 of the Public Officers Law as amended and the following rules

governing conflicts of interest: (i) No member shall receive compensation in return for services rendered in relation to matters before any State agency if compensation is contingent upon action or failure to act by such State agency, (ii) no member of the Board who is also associated with any firm or association in which he/she has a specific interest shall sell any goods or services valued in excess of $25 to any State agency unless pursuant to competitive bid, (iii) no member of the Board shall accept any gift (in excess of $75) under circumstances in which it could reasonably be inferred that the gift was intended to influence him/her as a member of the Board, (iv) members of the Board shall avoid any action which might result in or create the appearance of a conflict of interest.

Section 2. Pending Matters-Committees.

a) **Disclosure at Committee Meetings.** When a member of a committee of the Board or his or her family has any of the interests noted in Section 1(a) of this Article in a facility, program or activity the status of which might reasonably be affected by a matter which is before the committee, or when a member has an interest or association which might reasonably be construed as tending to embarrass the Board or committee or elicit public suspicion that he or she might be engaged in acts in violation of his or her trust, he or she shall, at the time of formal consideration of such matter by the committee, disclose such interest or association to the committee so that the committee is fully aware of such member's interest or association. A committee member who discloses such interest or association may, but shall not be required to, abstain from participation in the discussion of or vote on such matter at the committee meeting, unless a member is absolutely disqualified from voting in accordance with Section 1(a) of this Article.

b) **Disclosure at Board Meetings.** When the Chairperson of any committee which considered a matter reports the Committee's deliberations and recommendations to the Board, the Committee Chairperson shall indicate in the report all interests or associations disclosed by the committee members and state how such members voted with respect to the committee's recommendations. A committee member who disclosed such interest or association may, but shall not be required to, abstain from participation in the discussion of or vote on such matter at the Board meeting, unless a member is absolutely disqualified from voting in accordance with Section 1(a) of this Article.

c) **Violation of Provisions.** If any member knowingly and intentionally violates these provisions, the Board or its chairperson shall refer the matter to the Commissioner of Health for appropriate action.

IV. DESIGNATION AND DUTIES OF THE SECRETARY

The Board shall request the Department of Health to designate a Department employee as the Board's Secretary.

The Secretary shall prepare and send official notices of actions of the Board and shall administer the daily business of the Board under the general direction of the Chairperson. The Secretary shall send a copy of the Minutes of each meeting of the Board to each member of the Board as soon as practicable after the meeting. The Minutes, as approved or corrected, shall serve as the official record of a meeting of the Board. Minutes shall be distributed or made available to the public after they have been approved by the Board. The Secretary shall make

available records requested under the Freedom of Information Law and make announcements to the media and public of scheduled meetings as required by the Open Meetings Law.

V. MEETINGS OF THE BOARD

a) The regular meetings of the Board shall be held at least six times during the first year subsequent to December 1, 1997, and at least four times a year thereafter at a date, time and place approved by a majority of members, unless otherwise determined by the Board or by the Chairperson, who shall notify the Secretary at least ten business days in advance of the meeting. Special meetings of the Board may be called by the Chairperson at his or her discretion, or on the request of two members, and shall be called by the Chairperson on the written request of three members.

b) At least one meeting each year shall be a public hearing at which the general public may question and present information and comments to the Board with respect to the operation of the Board, the Breast Cancer Research and Education Fund, the Prostate and Testicular Cancer Research and Education Fund and pesticide reporting established pursuant to Sections 33-1205 and 33-1207 of the Environmental Conservation Law. At the public hearing, the Commissioner of the Department of Environmental Conservation or his or her designee shall make a report to the Board with respect to the efficiency and utility of pesticide reporting established pursuant to Sections 33-1205 and 33-1207 of the Environmental Conservation Law.

c) At least some portion of every regular Board meeting shall be set aside for public comment. A portion of one Board meeting each year shall be set aside for presentations of progress reports from selected award winners.

d) 1) The Secretary shall notify each Board member of Board meetings and shall send an agenda to his or her usual address not less than ten business days before the meeting.

2) A majority of the voting members of the Board shall constitute a quorum for the transaction of any business or the exercise of any power or function of the Board and all matters requiring action shall be passed by a vote of a majority of the voting members of the Board. (A voting member abstaining from a vote shall be counted as present for the purpose of establishing a quorum.) Except as provided below, all meetings shall be conducted in accordance with Robert's Rules of Order Newly Revised, and a record of each vote shall be maintained. Non-voting ex officio members of the Board may make motions to be considered by the Board, but may not vote on these or any other motions before the Board. The normal method of voting shall be by roll call. A roll call vote on any question shall be taken by ayes and noes, abstentions noted, and a record of how each member voted entered in the Minutes.

3) Any member who fails to attend three consecutive meetings of the Board, unless excused by formal vote of the Board shall be deemed to have vacated his or her position.

4) Meetings of the Board shall be noticed and conducted in accordance with the requirements of Article 7 (Open Meetings Law) of the Public Officers Law. Such meetings shall be open to the public except when otherwise provided by law. Guidelines for observers shall be adopted by the Board.

VI. ORDER OF BUSINESS

The order of business may be altered at the Chairperson's discretion or upon the request of a Board member.

A portion of each Board meeting shall be set aside for the development of an agenda for the next Board meeting.

VII. PROPOSAL REVIEW PROCESS

Independent Scientific Review Panel

There shall be one or more independent scientific review panels to review proposals (referred to as "applications for grants" in Public Health Law § 2411(1)(e)) for merit and to make recommendations to the Board for funding.

DOH staff, on behalf of the Board, will establish one or more independent scientific review panels, each of which shall be composed of at least one breast cancer survivor and/or activist, and one expert in breast cancer research and/or education. The number of independent scientific review panels will be dependent on the number of proposals received by the Board.

Responsibilities of the Board

The Board shall consider and rank proposals considered by the independent scientific review panels. Following an affirmative vote of Board members, the Board shall recommend that the Commissioner of Health approve those proposals for which the Board determines that funding is available. Board or committee meetings, or portions thereof, at which Board or committee members consider, rank, discuss or vote on proposals received by the Board may be conducted in executive session as authorized by the Open Meetings Law.

Summary Report

A summary report of the proposal review process will be prepared by Department of Health staff in consultation with the Board and made available to the public subsequent to the Board's recommendations to the Commissioner of Health.

Guidelines

The Board shall adopt guidelines that will specify additional aspects of the proposal review process.

VIII. COMMITTEES

There shall be the following Standing Committees:

1. On oversight of the development of requests for proposals (grant applications), and the process used to review proposals received by the Board; and on evaluating breast/prostate/testicular cancer research and educational program effectiveness nationwide and recommending future breast/prostate/testicular cancer research projects, called the:

   Committee on Program Needs and Effectiveness

2. On oversight and management of information requested by researchers from the New York State Department of Environmental Conservation Pesticide Sales and Use Registry and from private pesticide applicators called the:

   Committee on Access to Pesticide Registry and Pesticide Application Information

3. On Breast Cancer Research and Education Fund contributions, and the Board's outreach activities, called the:

   Committee on Funding and Outreach

Each Standing Committee shall consist of one or more members of the Board and may include non-Board members. The Chairperson of the Board shall appoint all Standing Committees and designate their Chairpersons. Duties of Standing Committees shall be prescribed by the Chairperson of the Board with approval by a majority of Board members.

In appointing Board members to any Standing Committee, the Chair shall, to the extent practicable, ensure that the Committee's composition reflects the overall composition of the Board and that any such Committee includes Board members and, if appropriate, non-Board members with relevant interests.

The Board may, at any time, provide for the appointment of a special committee on any subject. All such special committees not previously discharged by the Board shall be considered discharged one year following their appointment, unless the Board shall move to continue them.

A majority of the persons appointed to serve on a committee shall, if at least one Board member is present, constitute a quorum for the committee.

All committee matters requiring action or a formal recommendation shall be passed by a vote of a majority of the members appointed to serve on the committee.

When making a report to the Board, a committee should, in addition to reporting any recommendations of the majority of the committee, summarize any significant deliberations leading to such recommendations as well as opinions or recommendations of committee members who did not support the majority recommendations.

IX. OFFICE OF THE BOARD

The official headquarters of the Board (at which the official copies of its Minutes, records, documents and other papers shall be kept) shall be at the offices of the Commissioner of Health at Albany, New York. The Secretary shall be responsible for the safe-keeping of all Minutes, records, documents, correspondence and other items belonging to the Board. Every member of the Board and any other person duly authorized by a member shall have access at all times during the ordinary office hours of the Department of Health to all such Minutes, records, documents, correspondence and other items belonging to the Board; provided, however, that persons authorized by members shall not have access to records, documents, correspondence or other items that are exempt from disclosure or confidential under the Freedom of Information Law, the Personal Privacy Protection Law, or any other state or federal law. The Secretary shall designate some person to be in charge of all such Minutes, records, documents, correspondence and other items belonging to the Board during his or her absence from the office.

X. AMENDMENT OF BYLAWS

These Bylaws may be amended by the affirmative vote of the majority of the voting members of the Board at any regular or special meeting, provided that notice of the proposed amendment has been given at a prior meeting and that a copy of the proposed amendment has been sent by the Secretary to each member of the Board at least ten business days prior to the vote.

APPENDIX VII

HEALTH RESEARCH SCIENCE BOARD MEMBERSHIP

Voting Members

SANTO M. DIFINO, MD, Chair
Dr. DiFino is a clinician with Hematology-Oncology Associates of Central New York, PC; Chief of Internal Medicine, St. Joseph's Hospital Health Center; and associate clinical professor, Department of Medicine, State University of New York (SUNY) Upstate Medical Center, Syracuse, New York (NY). He was elected to Phi Beta Kappa and earned a BS degree in biology, *magna cum laude*, from Fordham University. Dr. DiFino obtained his medical degree in 1974 from the New Jersey Medical School. He interned and completed a residency in medicine at the SUNY Upstate Medical Center, Syracuse. He is board-certified in internal medicine, medical oncology and hematology.

Dr. DiFino has been the Chair of Internal Medicine at St. Joseph's Health Center from 1984 to present. He was the principal investigator of the Syracuse Community Clinical Oncology Program from 1984 to 1994 and continues as associate investigator there. He is also a member of Cancer and Leukemia Group B. Dr. DiFino was president of the Central New York Chapter of the Leukemia Society of America from 1994 to 1996 and was recipient of the Leukemia Society's Man of the Half Century Award. As a result of his active involvement in community service, he was nominated as Health Citizen of the Year and is a recipient of the President's Medallion from Catholic Charities of Syracuse. In addition to serving as chair of the Health Research Science Board, Dr. DiFino is chair of the Board's Committee on Program Needs and Effectiveness.

Dr. DiFino has served the Board since April 1997.

GAIL FRANKEL
Gail Frankel was diagnosed with breast cancer in 1993, and underwent a lumpectomy and radiation therapy. In 1995, she joined the Adelphi NY Statewide Breast Cancer Hotline and Support Program and became a telephone volunteer, outreach coordinator and breast cancer speaker/activist. As part of her speaking engagements, she has appeared at the Adelphi Celebration of Survivorship, co-chaired two Era of Hope symposia, testified before U.S. Senate and House subcommittees, co-chaired a workshop on the Long Island Study Project at the National Breast Cancer Coalition (NBCC) Advocate Training Conference, and appeared in several television spots concerning breast cancer-related news. As the NBCC's Field Coordinator for Long Island, she lobbies Congress on breast cancer issues and serves on U.S. Congressional Representative Tim Bishop's Breast Cancer Advisory Board. She is a graduate of the Project Leadership Education Advocacy Development (LEAD) institute, the NBCC Fund's premier science advocacy training course.

In 2001, Ms. Frankel became a consumer reviewer for the Board, a position she also has held on the U.S. Department of Defense Breast Cancer Research

Program since 2006. For the past several years, she has been a community member of Stony Brook University Medical Center's Institutional Review Board.

Ms. Frankel began serving the Board in July 2008, and concluded her service in 2010.

ALEXANDER P. GROSS

Mr. Gross is a prostate cancer survivor who underwent radiation therapy in 1993 and subsequently, combined hormone blockage therapy. He is an active member of Man-to-Man Awareness and Support Group in Syracuse, NY, and has served as editor of its newsletter. He also served for many years as a member of the now-defunct DOH Prostate and Testicular Cancer Detection and Education Advisory Council.

Mr. Gross is a retired engineering project manager in the former Aerospace Division of the General Electric Company. He received a BE degree in mechanical engineering from Stevens Institute of Technology and an MS degree from Syracuse University. He was a licensed New York State Professional Engineer (PE).

Mr. Gross has served the Board as an ex-officio non-voting prostate cancer survivor since March 2001, and was appointed as a voting member in July 2008. He concluded his service in 2010.

M. SUZANNE HICKS

M. Suzanne Hicks is a nine-year melanoma survivor and a seven-year breast cancer survivor. Ms. Hicks holds a BS in English education from the University of Tulsa, and an MSW degree from the SUNY at Albany. She is a clinical assistant professor of psychiatry at Albany Medical College and closed a 30-year psychotherapy practice in Albany, NY in 2005. Locally, she is a member of Capital Region Action Against Breast Cancer!, a community-based education and advocacy group. At the national level, she is very active in the NBCC, where she has participated in the NBCC Fund's Project LEAD, and was a speaker at the NBCC Annual Advocacy Conference in 2008. Ms. Hicks was appointed as a member of the Scientific Advisory Committee for the Dr. Susan Love/Avon Foundation Army of Women in 2008.

Ms. Hicks started a local breast cancer peer study group, and spends much of her time as a breast cancer advocate and as an artist with a studio in Albany, NY.

Ms. Hicks began serving the Board in July 2008.

RUSSELL HILF, PhD

Dr. Hilf is professor of biochemistry and oncology at the University of Rochester School of Medicine and Dentistry. He earned a BS in chemistry from the City College of New York in 1952, and an MS and PhD in biochemistry from Rutgers University. After serving in the U.S. Army and briefly at the Q.M. Food & Container Institute, he held the position of head of cancer endocrinology at the Squibb Institute for Medical Research for 11 years, prior to joining the faculty at the University of Rochester School of Medicine and Dentistry in 1969.

Dr. Hilf's primary research interests lie in the field of hormone action, with emphasis on estrogen and anti-estrogen mechanisms, and on insulin and IGF-1, as they pertain to breast cancer. A second area of research deals with photodynamic therapy of neoplasms. Dr. Hilf has published more than 200 peer-reviewed papers in professional journals and written 40 invited book chapters. He is a member of the American Association for Cancer Research, American Society for Biochemistry and Molecular Biology, The Endocrine Society, and the American Society for Photobiology. He has served as associate editor at Cancer Research for 20 years, and has been on the advisory board of Biochemical Pharmacology and the editorial boards of Oncology Research and Cancer Biochemistry Biophysics. He was elected a fellow by American Association for the Advancement of Science in 1966, received the University of Rochester Alumni Award for Graduate Education in 1992, was a Wellcome Visiting Professor in 1994, and was presented with the Davey Memorial Cancer Research Award by the University of Rochester Cancer Center in 1998.

Dr. Hilf has been a member of: the National Cancer Institute (NCI) Breast Cancer Task Force; the Veterans' Administration Merit Review Board on Oncology; the NCI Cancer Education Committee; and the American Cancer Society's Biochemistry and Chemical Carcinogenesis Committee as chair of its Biochemistry and Endocrinology Committee. He has served three cycles on the U.S. Army Breast Cancer Review Program and two terms on the National Institutes of Health (NIH) Reproductive Endocrinology Study Section, the last two years as chairman. He has completed two terms on the External Scientific Advisory Board for the University of Wisconsin Comprehensive Cancer Center. He also is a member of a scientific review panel for The American Institute for Cancer Research, and a reviewer of grant applications for the New Jersey Cancer Commission.

Dr. Hilf has served the Board since April 1997.

DONNA JURASITS

Ms. Jurasits has been a breast cancer survivor since 1997. She holds a BS in Health and Human Services from SUNY's Empire State College, and has 20 years of social work and case management experience. She is executive director of the Babylon Breast Cancer Coalition, Inc., a community-based education and advocacy group, and previously served as the Coalition's vice president from 2003 to 2007. She was program director of the Central Islip Civic Council, Inc., a non-profit, community-based agency dedicated to improving the quality of life for all residents of Central Islip, from 1990 to 2007. She has been a member of the Suffolk County Cancer Task Force since 2006.

Ms. Jurasits was named the Town of Babylon Volunteer of the Year in 2000, and was recognized as one of Newsday's Everyday Heroes in 2002. She volunteers at both the American Cancer Society and the Good Shepherd Hospice.

Ms. Jurasits began serving the Board in October 2008 and concluded her service in June 2010.

DIANA E. LAKE, MD

Dr. Lake is a medical oncologist with a practice that is devoted solely to the care of breast cancer patients. Her research interests involve all areas of breast cancer but focus mainly on the development of new therapies, prevention of cancer recurrence following surgery, and treatment of recurrent disease. Working in conjunction with her colleagues on the Breast Cancer Medicine Service at MSKCC and as the liaison in breast medicine to Cancer and Leukemia Group B, a national clinical trial cooperative research group sponsored by the National Cancer Institute, she is involved in clinical trials to develop better hormonal therapies and improved approaches to treatment before surgery. In addition, she is a member of the National Institutes of Health (NIH) Scientific Review Committee, and previously served on the NIH Cooperative Group Review and its Cancer Education committees.

Dr. Lake was appointed to the Board in September 2009.

DEXTER A. MCKENZIE, MD

Dr. McKenzie earned a medical degree from Meharry Medical College, Nashville, Tennessee, and holds undergraduate degrees in pharmaceutical sciences and chemistry. He completed residency training in combined internal medicine-pediatrics at Kings County Hospital and the State University of New York (SUNY) Health Science Center, Brooklyn.

Dr. McKenzie is assistant professor of medicine at SUNY Downstate Medical Center, and teaches medical students and medical residents while conducting original research. His public health interests are further expressed in collaborations with New York City Department of Health and Mental Hygiene initiatives in community participatory research, influenza vaccination and chronic disease abatement.

Dr. McKenzie has provided direct care —in both patient diagnosis and management — of numerous forms of childhood and adult illnesses for more than two decades in both private and hospital-based medical practices. He also serves on several scientific and philanthropic boards.

Dr. McKenzie began serving the Board in June 2010.

GARY R. MORROW, PhD, MS

Dr. Morrow is professor of radiation oncology and professor of psychiatry at the University of Rochester School of Medicine and Dentistry. He also serves as an Associate Director for Cancer Control at the James P. Wilmot Cancer Center, University of Rochester. He holds undergraduate degrees in mechanical engineering and in English from the University of Notre Dame. Following college, he served in the U.S. Navy Nuclear Power Program for four years and completed patrols on the U.S.S. James K. Polk. He received a MS in psychology and a PhD in clinical psychology from the University of Rhode Island, prior to joining the University of Rochester, where he completed an internship in clinical psychology and a two-year postdoctoral training fellowship in psychosomatic medicine. He also has earned an MS in medical statistics from the University of Rochester.

Since 1982, Dr. Morrow has authored more than 200 peer-reviewed publications in cancer control and been awarded continuous funding for his research in supportive cancer care and management of cancer and cancer treatment-related side effects. At present, he directs a research base for the NCI's Community Clinical Oncology Program that serves 25 affiliated collaborating institutions throughout the country and has referred more than 600 patients per year to Phase III cancer control clinical trials. His ongoing research is toward the better understanding and management of cancer-induced nausea and cancer-related fatigue.

Dr. Morrow has chaired more than two dozen permanent and *ad hoc* grant-funded review committees for the American Cancer Society, NIH, NCI and the U.S. Department of Defense. He has served on the American Cancer Society Executive Council, as well as the Advisory Council to the National Institute of Nursing Research.

Dr. Morrow began serving the Board in December 2008.

ARUN PURANIK, MD

Dr. Puranik is director of Image Guided Radiation Therapy in Latham, NY. He obtained a BS degree from Holkar Science College, Indore, India; and an MBBS and a medical degree in radiotherapy from M.G.M. Medical College, also in Indore. Dr. Puranik's postgraduate training included an internship in general medicine at M.R. Hospital, followed by appointment as resident and clinical demonstrator at the Department of Radiotherapy, M.G.M. Medical College. He served as a consultant radiation therapist at the N.P. Cancer Institute, Rajkot, India; and at Nanavati Hospital and Medical Research Center, Bombay, India.

Dr. Puranik completed a residency in the Department of Radiology, Radiation Oncology Division, SUNY Upstate Medical Center, Syracuse, NY, for which he was awarded a Fellowship in Radiation Oncology from the American Cancer Society. He was also a fellow in the Department of Radiation Oncology, Albany Regional Radiation Oncology Program, at Albany Medical College, where he was later named as assistant professor. Prior to his current venture, he was co-chair of the first prostate brachytherapy program in Upstate New York at Samaritan Hospital Cancer Treatment Center, Troy, New York. Dr. Puranik is board-certified in radiation oncology, and in 1997 received the Physician of the Year Award from the Capital District Chapter of the American Cancer Society.

Dr. Puranik has served the Board since July 1998.

ROBERT RITER

Robert Riter's involvement with the breast cancer community began in 1996 when he was diagnosed with the disease at the age of 40. Unlike many men with breast cancer, Mr. Riter decided to go public about his diagnosis and did so by writing an essay about his experiences that appeared in the July 17, 1997, issue of Newsweek magazine.

Since 2000, Mr. Riter has been associate director of the Cancer Resource Center of the Finger Lakes (formerly known as the Ithaca Breast Cancer Alliance). He provides direct client services, offering information and support to

people with all types of cancer. He also writes a regular column about living with cancer for the Ithaca Journal.

At the national level, Mr. Riter has served on scientific review panels at the U.S. Department of Defense Breast Cancer Research Program and the Susan G. Komen Breast Cancer Research Program. He has participated in Project LEAD and Project LEAD Quality Care training, sponsored by the NBCC, as well as the San Antonio Breast Cancer Symposium.

Prior to his work in cancer education and advocacy, Mr. Riter received an MS in hospital administration from the School of Public Health at the University of Michigan, and worked as a health care administrator before teaching health policy and health administration at Ithaca College.

Mr. Riter began serving the Board in July 2008, and became a voting member in August 2010.

NEETA SHAH, MD

Dr. Shah is vice president of women's health services at North Shore-Long Island Jewish Health System, overseeing coordination and expansion of women's health services. She works closely with the clinical chairs and hospital administrators to ensure that the health system offers a range of clinical programs to meet women's healthcare needs across their life span. She is a board-certified internist who is a member and leader of numerous professional and peer affiliations (statewide and nationally) that provide her with a platform to effect change and develop policies that directly benefit the communities and healthcare consumers of Long Island and the New York metropolitan area.

Dr. Shah is adjunct clinical associate professor of medicine, New York College of Osteopathic Medicine, and was clinical instructor in medicine, Cornell University Medical College. Dr. Shah is a fellow of the American College of Physicians (ACP) and a member of the American Medical Association and Association of Program Directors in Internal Medicine (APDIM). She is past president, New York State Program Directors in Internal Medicine, a member of the Health and Public Policy Committee (NY State Chapter of ACP) At North Shore-LIJ. Dr. Shah currently chairs the Clinical Advisory Committee for Women's Health Initiatives and serves on several other committees.

Dr. Shah has received many honors, awards and citations including the 2008 Top Women in Queens Business Award, the Physician Mentor Recognition Award from the American Medical Association Women's Physician Congress, the Physician Healthcare Hero Award from *Long Island Business News* and the Community Leader Award from the Long Island Women's Agenda. In addition she was an honoree for "Go Red for Women - Queens," and recently honored as one of the Top 50 Most Influential Women of Long Island from *Long Island Business News.*

Dr. Shah was instrumental in the establishment of an annual Women's Health Week and Women's Checkup Day for Suffolk County. She has created and hosts a series of video episodes of "What Women Want and Need to Know."

Dr. Shah received her medical education at J.N. Medical College, Belgaum, India; and completed her residency at Flushing Hospital Medical Center, Queens, NY.

Dr. Shah began serving the Board in December 2008.

ELINOR J. SPRING-MILLS, PhD

Dr. Spring-Mills is a SUNY Distinguished Teaching Professor, and professor of cell and developmental biology and of urology at SUNY Upstate Medical University, Syracuse, NY. She holds a BA degree in physiology from Vassar College, an MA in physiology from Mount Holyoke College, and a PhD in medical sciences (anatomy, biochemistry and pathology) from Harvard Medical School. She completed a postdoctoral fellowship at the NIH Division of Arthritis, Metabolic and Digestive Diseases, and then moved to San Francisco, where for seven years she was assistant chief of cell biology at the Veterans' Administration Hospital; and assistant and, subsequently, associate professor of anatomy at the University of California at San Francisco Medical School.

She has served as a member and chairperson of the Breast Cancer Working Group/Breast Cancer Task Force of the NCI; a founding member of the first Pan American Congress of Andrology; a member of the Educational Policies Committee, American Association of Anatomists; and interim chair of the Department of Anatomy at Upstate Medical School. In addition to publishing research papers and abstracts, she has co-edited three books on the accessory glands of the male reproductive tract and human prostatic cancer. Dr. Spring-Mills is chair of the Board's Committee on Funding and Outreach.

Dr. Spring-Mills has served the Board since May 2006.

MARC WILKENFELD, MD

Dr. Wilkenfeld is a board-certified occupational/environmental physician working in New York City. He is an assistant professor in clinical medicine at Columbia University Medical Center, where he also serves as occupational medicine consultant to Columbia's Department of Environmental Health and Safety. He has lectured and trained internal medicine and family practice physicians on aspects of occupational/environmental medicine. Dr. Wilkenfeld also is an attending physician at New York Presbyterian Hospital and Beth Israel Medical Center. He has served as an occupational medicine consultant to corporations, government agencies and other organizations in the U.S. and Europe. He is past-president of the New York Occupational Medicine Association, and has lectured extensively in the field of occupational and environmental medicine.

Following the attacks of September 11, 2001, Dr. Wilkenfeld was named consultant to a number of government agencies, corporations and community groups on the environmental health impact of the disaster. In this role, he reviewed pre- and post-cleanup data and addressed questions regarding the potential health effects of contamination with World Trade Center dust. He moderated and participated in community forums designed to answer the health questions of residents and site workers. He also has evaluated cases of illness related to the disaster. Dr. Wilkenfeld serves as medical advisor to New York City Councilmember Alan Gerson, whose district includes Lower Manhattan. In

this role, he continues to assist the Lower Manhattan Community with questions related to the health impacts of September 11.

Dr. Wilkenfeld has served the Board since September 2004.

Non-voting Members

BEVERLY CANIN

Beverly Canin is a two-time breast cancer survivor. She is president of Breast Cancer Options, Inc., a survivor-driven, community-based breast cancer support, education and advocacy organization in the Mid-Hudson Valley. She is a graduate of the NBCC Fund's Project LEAD. She participates annually in the NBCC's Advocacy Training Conference and Lobby Day in Washington, D.C. Ms. Canin is the alternate representative from Breast Cancer Options, Inc. to the Board of Directors of the New York State Breast Cancer Network, and the New York State Breast Cancer Support and Education Network, where she has chaired the Procedures Committee and is a member of the Access to Care Committee.

Ms. Canin has served as a consumer reviewer for the U.S. Department of Defense Breast Cancer Research Program since 2001 at both the peer-review and the programmatic review levels. She also has worked as an advocate reviewer for the California Breast Cancer Research Program. She is a member of Breast Cancer Action and of the Mid-Hudson Valley affiliate chapter of Sisters' Network, Inc.

Ms. Canin is retired, after having worked many years in non-profit administration, including as a consultant for program development and evaluation.

Ms. Canin began serving the Board in July 2008.

SUSAN COHEN, JD

Susan M. Cohen was an affordable housing and breast cancer activist, legal services lawyer and advocate for the poor and disadvantaged. In her roles as tenant attorney and organizer, active member of the local political community and her local union, and co-founder of a statewide breast cancer organization, she has dedicated her life to helping others. She represented low-income tenants for more than 25 years, first at MFY Legal Services and later as a senior staff attorney/Community Justice Project Coordinator for Manhattan Legal Services (MLS).

Ms. Cohen was a 16-year breast cancer survivor and was chair of the New York State Breast Cancer Network. The organization, which she co-founded in 1998, is composed of 25 groups located throughout New York State which focus on grass roots, survivor-driven support and education services for breast cancer survivors. She was selected as a 2010 Woman of Distinction by New York State Senator Thomas K. Duane.

Ms. Cohen was appointed to the Board in May 2009. She passed away in 2010.

Ex-officio Members

HEATHER C. DANTZKER, PhD
Dr. Dantzker was appointed as the Cornell University Institute for Comparative and Environmental Toxicology's designee to the Board in July 2008, and resigned in March 2009.

SUZANNE SNEDEKER, PhD
Dr. Snedeker served as the Cornell University Institute for Comparative and Environmental Toxicology designee to the Board from September 2009 through January 2010.

Dr. Snedeker was an Assistant Professor of Environmental Toxicology and Health at Cornell University, and is the Research Project Leader for the Program on Breast Cancer and Environmental Risk Factors in New York State. Dr. Snedeker earned her PhD at the University of Wisconsin, Madison, and her BS at Cornell University. She completed post-doctoral fellowships at the National Institute for Environmental Health Sciences in heavy metal toxicology and mammary gland cancer biology.

Before joining the Cornell faculty, she was a Project Officer in the National Toxicology Program, and evaluated the effect of endocrine-disrupting chemicals on reproduction and incidence of cancers. Her current responsibilities include writing critical evaluations of the scientific literature on the relationship of pesticides and breast cancer risk, translating these evaluations into short fact sheets for the non-scientist, and developing long-distance learning modules on the environment and health. She has given numerous presentations and workshops on environmental factors and breast cancer risk. She is a member of the American Public Health Association, American Association of Pesticide Safety Educators, New York Academy of Science, American Society for Nutritional Sciences, and the American Association for the Advancement of Science.

VAL WASHINGTON, JD
Val Washington is Deputy Commissioner for Remediation and Materials Management at the DEC. Previously, Ms. Washington, a graduate of Albany Law School, worked as senior policy analyst for New Partners for Community Revitalization, a not-for-profit organization that assists community organizations with neighborhood revitalization efforts. In addition to her current post, she has held a number of government positions since her graduation from law school, beginning with her appointment as Counsel to the New York State Olympic Task Force in 1979, and then as Regional Attorney for DEC's Region 3 Office in New Paltz, NY. She returned to Albany to take a position as Assistant Attorney General under Robert Abrams, and, for most of her 13-year tenure with the NYS Department of Law, held the title of Deputy Bureau Chief for its Environmental Protection Bureau. She left the Attorney General's Office in 1995 to become executive director of Environmental Advocates of New York, the State's primary environmental lobbying organization. After more than a decade of work in the non-profit sector, she returned to State government in 2007 to accept her current appointment.

Ms. Washington was appointed as the DEC Commissioner's designee to the Board in November 2007.

BARBARA WEISER, MD

Prior to her retirement in 2010, Dr. Barbara Weiser served as co-director of the HIV Pathogenesis Research Laboratory at the New York State Department of Health's Wadsworth Center and professor of medicine at Albany Medical College. She received a bachelor's in English from Vassar College and an MD degree from the University of Pittsburgh. After training in internal medicine at Bellevue Hospital, New York University Medical Center, she completed an infectious diseases fellowship at Memorial Sloan-Kettering Cancer Center and a postdoctoral research fellowship with Dr. Harold Varmus at the University of California, San Francisco.

Dr. Weiser's research bridges the fields of basic and clinical investigation, and has focused largely on HIV infection in women. Her investigations provided the scientific basis for successful prevention of HIV mother-to-child transmission by means of prophylactic HIV therapy, and led to her receiving the first Wadsworth Center Pangborn Award for excellence in research with an impact on clinical medicine. Dr. Weiser's work both as a clinician caring for HIV-infected individuals and an investigator studying cohorts of HIV-infected women in the United States, Kenya and Rwanda, has yielded extensive, direct interactions with patients and patient advocates, particularly women. Her most recent research, concentrating on translational medicine, has led to development of an assay for a new biomarker now in use for clinical management of HIV infection.

Dr. Weiser served as the DOH Commissioner's designee to the Board from June 2009 through August 2010.

APPENDIX VIII
COMMENTS FROM PUBLIC HEARINGS

October 2, 2009 Public Hearing
No testimony was offered.

October 1, 2010 Public Hearing
No testimony was offered.

APPENDIX IX
DEC REPORT ON THE BASIS, EFFICIENCY AND SCIENTIFIC UTILITY OF PESTICIDE REPORTING

DEC UPDATE – October 2009, Reporting Year 2008:

18,179 Commercial applicators, technicians and aquatic anti-fouling paint applicators were required to file an annual report.

339 Commercial Permittees were required to file an annual report.

Overdue notices were sent out March 16 to 2,774 commercial applicators, technicians, aquatic anti-fouling paint applicators and 44 commercial permittees stating they had until March 31 to get their reports in before they were assessed a penalty.

Violation notices were sent out June 7 to 1,405 commercial applicators, technicians and aquatic anti-fouling paint applicators and to 16 commercial permittees, assessing a monetary penalty.

1,405 Applicator/Technician violations
(7.7% of those required to file):

353 individuals have surrendered their license
18 are deceased
90 paid the fee to resolve the violation
83 had typos, e-filing errors or 26A amends
861 violations still outstanding

16 Commercial Permit violation notices
(4.7% of those required to file):

5 withdrawn (company changed name and received new permit numbers but had reported the entire year's sales)
1 violation was resolved
3 paid the fee
7 violations still outstanding

Entities who did not settle cannot renew license or permit until their violation is resolved.

DEC UPDATE – October 2010, Reporting Year 2009:

17,185 Commercial applicators, technicians and aquatic anti-fouling paint applicators were required to file an annual report.

332 Commercial Permittees were required to file an annual report.

Overdue notices were sent out March 1 to 1,847 commercial applicators, technicians, aquatic anti-fouling paint applicators and 54 commercial permittees stating they had until March 15 to get their reports in or be fined.

Violation notices were sent out April 23 to 798 commercial applicators, technicians and aquatic anti-fouling paint applicators and to 19 commercial permittees, with a $250 fine.

798 Applicator/Technician violations
(4.6% of those required to file):

154 individuals have surrendered their license
12 are deceased
69 paid the fee to resolve the violation
83 had typos, e-filing errors or 26A amends
517 violations still outstanding

19 Commercial Permit violation notices
(5.7% of those required to file):

7 withdrawn (company changed name and received new permit numbers but had reported the entire year's sales)
1 paid the fee
1 surrendered commercial permit
9 violations still outstanding

Entities who did not settle cannot renew license or permit until their violation is resolved.

Compliance Rate for Reports:

2009: ~ 7 million records
5.3 million received electronically
95.4% Apps and 94.3% CP's reported

2000: 5.3+ million records
645,000 received electronically
93.5% APP's and 99% CP's reported

PRL FUNDING has been cut significantly:

05/06 DEC received $2,025,000 (money was taken and used for other things)
06/07 DEC received $2,025,000
07/08 DEC received $2,025,000
08/09 DEC received $0
09/10 Governor proposed $575,000 - DEC only received $500,000
10/11 $575,000 is expected

DEC cut funding to Cornell from $698,000 to $300,000 for fiscal year 2010/2011. Therefore, staff at Cornell that work on the PSUR project have been cut from 8 to 2.25

DEC PRL staff was originally 10 people in Central Office. Now we have only 3, with only 1.5 working on PRL

At this level of funding, the program will not be able to process the data currently collected. The program is looking closely at cost saving measures, including limiting the data that are required to be reported, and posting only the pesticide data on the website, rather than full annual reports.

Confidential data elements are address level data and only five requests (four original and one revised) for confidential data have been made in the 12 years of the program; the last request was made in 2006. Three of those four requests were from DEC's groundwater monitoring contractor to decide where to put monitoring wells.

DOH developed a Request for Information (RFI) to gather feedback from researchers and other interested parties regarding the utility of pesticide sales and use reporting in New York State. The information gathered as a result of this RFI may be used by the Health Research Science Board to inform its upcoming recommendations to the Legislature. Responses are due by October 15th.

APPENDIX X

RESEARCH ACCOMPLISHMENTS

Chi-Chen Hong, PhD, Health Research Incorporated/Roswell Park Cancer Institute, "Determinants of Weight Gain in Women with Breast Cancer," Christine Ambrosone PhD, mentor, Contract Number C020918, 1/1/06 – 12/31/08; $120,000.

Weight gain is common in early-stage breast cancer patients receiving adjuvant chemotherapy and has been associated with poorer prognosis. The goals of the study are to examine post-diagnostic weight gain and changes in body composition with respect to changes in circulating sex hormone levels. The influence of demographic, lifestyle and clinical factors is also assessed.

A prospective longitudinal study of weight gain was conducted in 264 study participants, aged 18 and older, with early-stage breast cancer. After informed consent was obtained, serial biospecimens and survey data were collected prospectively at baseline, six and 12 months to measure hormone levels, and to assess menopausal status, anthropometry, diet, physical activity and psychological variables. These factors are being evaluated in relation to changes in weight and body composition during and following therapy.

In the 264 study participants with data from the time of cancer diagnosis and 12 months following diagnosis, overall changes in weight, body mass index (BMI) or percent body fat were not observed. Treatment with AC-based chemotherapy was not associated with weight gain or changes in adiposity compared to women who did not receive chemotherapy, suggesting that the newer current chemotherapy regimens were less likely to result in weight gain compared to the older CMF regimens. Post-diagnostic weight gain and changes in body composition were not associated with estrogen receptor status, cancer stage or use of hormonal therapy. Younger women and women who were lighter at the time of cancer diagnosis, however, were more likely to gain weight. Interestingly, use of hormone replacement therapy and oral contraceptives was protective for post-diagnostic weight gain. Women with high daily energy intake were also found to be more likely to gain weight. Findings suggest that sex hormone levels may be a modest determinant of post-diagnostic weight gain.

Future planned directions for this cohort of breast cancer patients include translation of findings from animal research showing a link between body temperature regulation and cancer prognosis. Another direction of future research will seek increased understanding of how obesity might adversely affect breast cancer prognosis through effects on immune function, and how these differences are reflected in differences in body temperature and/or symptoms of being cold.

Shuang Fu, PhD, Institute for Cancer Genetics, Columbia University, "Checkpoint Functions of the BRCA1/BARD1 Tumor Suppressor," Richard Baer, PhD, mentor. Contract Number C021330, 1/1/06 - 12/31/08, $120,000.

Germline mutations of the BRCA1 gene are a major cause of hereditary breast cancer. The BRCA1 protein is involved in multiple aspects of the DNA damage response,

including cell cycle checkpoint control and homology-directed repair of double-strand DNA breaks (DSBs). However, the molecular mechanisms by which BRCA1 mediates these processes are not understood.

This laboratory previously reported that BRCA1 interacts with a poorly defined protein called CtIP. Significantly, the *in vivo* association between these proteins is ablated by tumor-associated missense mutations of BRCA1, suggesting a critical role for this interaction in the tumor suppressor activity of BRCA1. Subsequently, Yu *et al.* showed that BRCA1/CtIP interaction requires phosphorylation of CtIP at residue S327, and that this phospho-dependent interaction is in turn necessary for activation of the transient G2/M checkpoint in cells subjected to DNA damage. Therefore, it was set out to determine the mechanisms by which CtIP mediates the tumor-suppression functions of BRCA1, including its role in cell cycle checkpoint control.

Substantial progress was attained on two major fronts. First, it was found that CtIP is an enzymatic substrate of BRCA1/BARD1, and, in collaboration with Dr. Junjie Chen and his colleagues, it was shown that BRCA1/BARD1-mediated ubiquitination of CtIP is required for proper execution of the transient G2/M cell cycle checkpoint. Second, in collaboration with Stephen Jackson and his colleagues, this laboratory also identified a novel function for CtIP DNA damage response. It was determined that CtIP is required for DNA resection, an early step in the cellular response to double-strand DNA breaks (DSBs) that promotes both DSB repair and checkpoint signaling. Accordingly, CtIP may be a critical mediator of the genome maintenance and tumor suppression functions of BRCA1.

It was ascertained that CtIP, a protein that interacts with BRCA1, is required for two key aspects of the DNA damage response, resection of DSBs and cell cycle checkpoint signaling. These findings suggest that CtIP is a critical mediator of the genome maintenance and tumor suppression functions of BRCA1. Therefore, future studies of the BRCA1-CtIP pathway should uncover promising molecular targets for therapeutic intervention in human breast cancer.

The investigator reported the following publication related to this research:

Sartori A, Lukas C, Coates J, Mistrik M, **Fu S**, Bartek J, Baer R, Lukas J and Jackson SP. 2007. “Human CtIP Promotes DNA End Resection.” *Nature*, 450:509-514.

Corinne LeLoup, PhD, Columbia University, “Interactions of RAD9, RAD9B and BRCA1 in Breast Cancer,” Howard Liebeman, PhD, mentor. Contract Number C021331, 1/1/06 - 12/31/08, $120,000.

Cancers can be caused by mutations or defects in genes that code for proteins capable of protecting DNA from damage, controlling cell division or regulating cell death processes. Factor that influence optimal protein activity, expression level, phosphorylation status or subcellular localization are important. Those factors often interact with the genes or encoded proteins that mediate carcinogenesis. BRCA1, Rad9 and Rad9B are proteins involved in protecting the genome from damage. Their aberrant levels or expression have been associated with cancer. BRCA1 is responsible at least

in part for some forms of breast cancer. Rad9 is directly linked to prostate and breast cancer, and Rad9B-reduced expression has been correlated with seminomas.

The investigators proposed that BRCA1 interacts with Rad9 and/or Rad9B to protect the genome, and problems with the interaction contribute to breast cancer. To mimic internal and environmental damage to DNA, cells were exposed to gamma rays, ultraviolet (UV) irradiation and hydroxyurea, and the activity/function of proteins of interest was examined. Preliminary results have demonstrated that hRad9 and hBRCA1 interact. However, interactions could not be demonstrated between BRCA1 and Mrad9 proteins in mouse ES cells. Interaction between mouse BRCA1 and Mrad9 could be dependent on cell cycle stage or on an external stimulus like DNA damage, which has not yet been tested.

This work could lead to new cancer detection methods and more targeted types of treatment. It was also of interest to determine the conditions under which mouse genes function similarly to human equivalents in order to develop novel animal models of breast carcinogenesis.

Sapna Vijakumar, PhD, Mount Sinai School of Medicine, "Role of the new Wnt receptor Ryk in Breast Tumor Progression," Stuart Aronson, MD, mentor. Contract Number C021333 1/106 - 12/31/08, $120,000.

Breast cancer is the leading cause of cancer-related deaths in American women. More than 90 percent of these deaths arise when the cancer spreads, or metastasizes, from its primary site of origin to a secondary site such as the lungs or bone. In breast cancer patients, the secondary site of metastasis is often the bone. A dire need has emerged for a better treatment alternative to reduce drastically fatality associated with breast cancer.

The wnt signaling pathway plays an important role in normal bone development, and this laboratory previously showed that this pathway is frequently deregulated in breast cancer cell lines. Various breast cancer cell lines express multiple components of the wnt pathway. The purpose of this research is to understand how various wnt pathway components influence breast cancer-induced bone metastasis.

The phenotype of the metastatic lesion depends upon the activities of osteoblasts, or the bone-forming cells, and osteoclasts, or the bone-resorbing cells — the two major cell types involved in bone remodeling. Osteoblastic lesions could be due to increased activity of osteoblasts or inhibition of osteoclast function, or both, while osteolytic lesions may arise due to increased activity of osteoclasts or decreased function of osteoblasts, or both.

Breast cancer cells that reportedly induce osteolytic lesions *in vivo* to express high levels of the wnt pathway inhibitor DKK1 have been identified. Moreover, breast cancer cell lines known to induce osteoblastic lesions *in vivo* were found to express high levels of wnt ligands and relatively low levels of wnt inhibitors. In a paracrine assay, DKK1-expressing breast cancer cell lines inhibited wnt signaling in human mesenchymal cells, the progenitors of bone cells. On the other hand, breast cancer cells predominantly expressing wnt ligands activated paracrine wnt signaling in bone progenitor cells *in vitro*. Initial experiments showed that DKK1 may have stimulatory effects on differentiation of

human osteoclast precursors, while osteoblastic breast cancer cell-secreted factor/s inhibited osteoclast differentiation. Thus, breast cancer cells exert their metastatic effect by affecting both bone-forming and bone-resorbing progenitor cells. Therapeutically targeting this vicious interaction of breast cancer cells with normal cells of the bone appears to hold the potential to better control breast cancer-induced metastasis.

Ji-Yeob Choi, PhD, Health Research Incorporated/Roswell Park Cancer Institute, "PCBs Exposure CYP1A1 Polymorphism and Breast Cancer Risk," Kirsten Moysich, PhD, mentor. Contract Number C021337, 1/1/06 – 12/31/08, $120,000.

Although a number of epidemiological studies did not demonstrate excess breast cancer risk for women with high polychlorinated biphenyl (PCB) body burden, evidence has been emerging that the association between PCB exposure and breast cancer risk is modified by a genetic polymorphism of the CYP1A1 gene. This laboratory pooled data from existing studies on both PCB body burden and CYP1A1 genotypes to conduct a more thorough investigation of the potentially significant gene-environment interaction.

An attempt was undertaken to collect all studies with available data on PCB body burden and CYP1A1 genotype effects on breast cancer risk conducted in the United States. Investigators assembled six raw datasets from seven studies, comprising 2,391 case patients with breast cancer and 2,285 control participants and performed pooled analyses of the original data.

Although no significant association was found among Caucasian women, a suggestive trend emerged of elevated breast cancer risk associated with PCBs among African-American women. No significant association was observed when stratified by menopausal status, body mass index (BMI) or lactation. When stratified by menopausal status, no association with CYP1A1*2A was observed. When PCB levels and CYP1A1 genotypes were combined, postmenopausal women with CYP1A1*2C and exposed to the highest PCB body burden showed a 1.75-fold risk of breast cancer. No additive association was seen among premenopausal women or by the race strata.

While these analyses do not support an association between breast cancer risk and overall adverse effect of environmental PCB exposure, they do suggest that the association between PCB exposure and breast cancer may be modified by genetic factors among postmenopausal women. The findings would be helpful in concluding the active public and scientific debate on the scientific validity and relevance of studies aimed at investigating the role of PCBs and related compounds in breast cancer etiology. Additional studies are warranted to investigate other genetic factors on the effects of PCB exposure prospectively.

The investigator reported the following publication related to this research:

Choi J-Y, Laden F, Millikan R, Zirpoli G, Grasela M, Gammon M, Helzlsouer K, Teitelbaum S, Wolff M, Zheng T, Moysich K. "Pooled Analyses of Polychlorinated Biphenyls (PCBs) Exposure and CYP1A1 Genetic Polymorphisms on Breast Cancer Risk." In: *Proceedings of the 100th Annual Meeting of the American Association for Cancer Research*; 2009 Apr 18-22; Denver, Colorado. Philadelphia (PA): AACR; 2009. Abstract number 3941.

APPENDIX XI

HOUSEHOLD PESTICIDE USE REPORT

Household Pesticide Use Reporting in Oregon and Its Relation to New York

Nancy Kim, PhD, Center for Environmental Health, NYSDOH
June 5, 2009

Although the Health Research Science Board's primary duty related to pesticides is the review of applications from researchers for access to the confidential pesticide sales and use data, the Board has other specific duties, including one related to household use of pesticides. Under section 2413 of the Public Health Law, "the commissioner shall submit a report … biennially … Such report … shall include recommendations from the health research science board (on) whether private citizen use of residential pesticides should be added to reporting requirements." The pesticide sales and use data provide some information on possible exposure for human health-related research.

The pesticide sales and use data can be put into perspective with other types of exposure data. Among the four types of data that might be useful for estimating exposure, biological monitoring data are most directly related to exposure because a sample of a biological fluid such as blood or urine is analyzed for a specific substance. The results tell us how much of the substance is actually in the body. With environmental sampling data, a substance is measured in a medium such as air or water, which a person may breathe or drink; these data can be used to estimate human exposure. The pesticide sales and use data fall into the third category, which is release or use data. The data tell us how much of a particular pesticide has been applied to a certain place, for example, outside a home, but it is difficult to determine whether anyone has been exposed or how much exposure may have occurred. The last category is production, distribution, and sales data, which are the least able to provide information about exposure; although we know how much of a particular substance was produced or sold, we don't know if it was used or where it was used.

New York State Department of Health (DOH) staff have periodically reviewed what other states have done regarding household use of pesticides. Oregon is important because it has the only state program that collects information on household use of pesticides. Oregon's pesticide reporting law written in 1999 required the Oregon Department of Agriculture (ODA) to develop a specific mechanism to identify household use. A workgroup, after discussing various options, selected a survey to collect household use information. ODA hired a marketing firm to develop and implement the survey. Two annual reports on the household use survey are available at the ODA website: Pesticide Use Reporting System: 2006 Amended Annual Report (www.oregon.gov/ODA/PEST/docs/pdf/pursreportweb2006.pdf) and Pesticide Use Reporting System: 2007 Annual Report (www.oregon.gov/ODA/PEST/docs/pdf/pursreportweb2007.pdf).
The 2006 data were summarized for the Board because more detail was provided in the 2006 report about how the survey was conducted. The survey was a pesticide use diary to be administered quarterly with the goal of 250 3-month diaries completed per quarter, or 1,000 per year, which represents 0.075% of households in Oregon (U.S. Census

2000). The marketing firm used a purchased list of telephone numbers to make calls to enlist participants; about 3,000 calls were needed to obtain 250 3-month diaries per quarter (or 12,000 calls per year), which is a yield or response rate of about 8%. Among the information collected for the diary were the brand name or product name, U.S. Environmental Protection Agency (EPA) registration number, and a measure of how much was applied (e.g., ounces, pounds, teaspoons, % of container).

About one third of respondents who kept the diary for at least one month reported no use of pesticides. The remaining diaries included about 3,000 reports of pesticide use (applications). ODA indicated that a major problem was that only about 30% of reports contained sufficient information to calculate the pounds of active ingredient. ODA identified three reasons for the inability to calculate the active ingredient amount:

- Participant unable to specify amount of pesticide used (especially spray bottles/cans)
- Participant unable to determine what products were pesticides (later changed terminology to "pest control products")
- Participant did not provide correct identification number (EPA number from label)

In comparison to Oregon, New York has about 5.5 times the population and about 5.3 times the number of households. Oregon obtained 1,000 3-month diaries in a year, representing 0.075% of the households in the state. This percentage would be 5,300 households in New York. In Oregon, 12,000 screening calls were required to obtain completed 3-month diaries from 0.075% of households. If the response rate were the same in New York, 64,000 screening calls would be required. In 2007, ODA's contract with the marketing firm was for $125,000.

Oregon's pesticide reporting law written in 1999 had a sunset date of December 31, 2009. A bill has been proposed to extend the law through 2015, but ODA will end the household survey with 2008. ODA feels that the survey is not useful for quantifying household pesticide use. When some of the problems with the survey surfaced after 2006, ODA considered other methods to collect household use information but felt that all possible methods had significant problems. With Oregon's budget problems, eliminating the household survey was helpful in that it saves $125,000 per year. As of early March 2009, funding for the non-household portion of the pesticide reporting program in Oregon was not included in the proposed 2009-2010 budget but could be reinstated.

NYSDOH staff reviewed the results of the Oregon household survey and estimated that the cost of a similar survey in New York State would likely be about $1 million per year. Because of problems with the data completeness and quality, the household survey data would be of questionable use for estimating exposure and therefore would not likely be useful for conducting human health-related research or for activities of the New York State Department of Environmental Conservation (DEC).

The Board discussed how Oregon's experience with collecting household pesticide use data relates to New York. Board members commented that a survey in New York would involve a great deal more effort and expense than Oregon's survey, and that the information obtained was not likely to provide a good estimate of exposure in human health-related research. Specific comments made during discussion include the following:

The estimate of 64,000 phone calls needed for New York State may be quite low, perhaps by as much as one-half, because Oregon has a tradition of better response to health surveys. (Evidence for this was found in the refusal rates reported for an annual telephone health survey conducted by the U.S. Centers for Disease Control and Prevention. In the report of the 2006 Behavioral Risk Factor Surveillance System [BRFSS], the median refusal rate for the 50 states was 15.3%; the refusal rate was 18.9% in New York and 12.8% in Oregon. See table 6 at ftp://ftp.cdc.gov/pub/Data/Brfss/2006SummaryDataQualityReport.pdf.)

The type of survey done in Oregon may not be economically or operationally feasible for New York because of the number of telephone calls needed and the low participation rate.

The relatively poor reliability of the information obtained and its relatively low relevance to human health-related research is of concern.

The cost of a similar survey in New York might be significantly more than $1 million.

Conclusion
The Board concluded that at this time the information about collecting data for household use of pesticides did not support including these data in the reporting requirements.

APPENDIX XII

STATUS OF AGENCY ACTIONS ON HRSB RECOMMENDATIONS ON PESTICIDE REPORTING

2000-2010

SOURCE*	RECOMMENDATION	STATUS
	Recommendations not requiring a change in legislation	
2000(2)	1. Continue to inform researchers of the availability of funds for research on cancer and of the availability of the pesticide data for research.	This is an ongoing effort. The availability of funds continues to be publicized. A web page describing and linking to the Pesticide Sales and Use Database is being added to DOH's Environmental Public Health Tracking web site.
2000(3), 2006 (2)	2. DEC should emphasize accurate reporting of the data by continuing to develop and implement quality assurance and quality control procedures. Incorporate checks on the following (2006): a. very similar amounts reported for multiple ZIP codes b. liquids reported as pounds and solids as gallons c. quantities reported at county and ZIP code levels that differ by more than an order of magnitude d. outliers	This is an ongoing effort that involves staff from both DEC and Cornell University. They continue to refine the quality control program where Department staff review reports to ensure basic criteria were met. These criteria were established to maximize the volume of data that can be transferred to the master database. In 2006, at the request of DEC, new computer programs were developed by Cornell to review the data using the criteria developed and previously used by DEC in a manual review of the reports. These changes were necessary due to funding and staffing cuts. Error reports are produced, and outreach efforts are conducted to correct the data. If errors are too numerous, the report is rejected and returned to the business or applicator to be corrected and resubmitted. Once the corrections are made, the data are posted to the website.
2000(4c)	3. Explore ways to assist the pest control industry with the difficulty of reporting amount of concentrate when commercial applicators deal with diluted material.	This is an ongoing educational effort. DEC has done extensive telephone outreach on a case-by-case basis educating applicators how to report correctly. In addition, the Department and Cornell have developed programs to conduct quality checks on reports containing quantities that appear to fall outside of accepted parameters. Staff review reports containing these "out of range" quantities and the responsible applicators and businesses are contacted.

SOURCE*	RECOMMENDATION	STATUS
		With the approval of the applicator or business, staff corrects the reporting errors. Once the corrections are made, the data are posted to the website.
2000(4d)	4. Explore ways to assist reporting of locations without street address (e.g., rights of way, streams, parks, and aerial applications), such as use of a Geographic Information System (GIS) approach.	This is an ongoing effort. A GIS approach cannot currently be used for reporting in all areas of the state; some options, such as reporting mile markers, stream tributary numbers, etc., have been implemented, while others are still being explored.
2000(4e)	5. Explore methods to increase or improve reporting, possibly through development of additional outreach and/or enforcement activities and electronic reporting.	An electronic reporting option is in place and was emphasized at workshops held throughout the state and by direct mailing to all applicators and sellers. Due to extensive outreach efforts conducted by DEC on a case-by-case basis, we receive more than half of the PRL data in an electronic format. However, to mandate electronic reporting would require a change in law by the Legislature. Enforcement actions are taken each year against applicators and sellers that do not report.
2006 (3)	6. Explore the possibility of making available an application line-item dataset with no confidential information for counties and ZIP codes.	DEC will explore the feasibility of a line-item dataset for counties and ZIP codes. There is no funding or staff available at this time to pursue this.
2006 (4)	7. Explore the possibility of adding number of applications to county and ZIP code data.	DEC will explore the feasibility of adding the number of applications to county and ZIP code data. There is no funding or staff available at this time to pursue this.
2006 (5)	8. Explore ways to include fields from the Pesticide Product Ingredient and Manufacturer System (PIMS) or to include the ability to link to PIMS or to the EPA Pesticide Product Information System.	This will require major programming changes to the database. There is no funding or staff available at this time to pursue this.
2006 (7)	9. Increase NYSDEC's budget and the funds provided by contract to Cornell.	

SOURCE*	RECOMMENDATION	STATUS
	Recommendations that may require a change in legislation	
2006(1)	Allow local health agencies access to the confidential data for surveillance purposes	Researchers including local health agencies can apply to the Health Research Science Board for access to the confidential data. One of the criteria for releasing the data is that the data have to be used for human health related research. Some forms of surveillance may be considered research, while other forms may not meet the criterion for human health related research. A change in law by the Legislature would be required to allow local health agencies access to the confidential data without requesting the data from the Health Research Science Board.
	Recommendations requiring a change in legislation	
2000(L1)	1. Change the date by which DEC must issue its report to the Governor and Legislature to allow a longer period for quality control and quality assurance of the data. If partial data are released, they should be available as soon as possible; the final report should contain only high quality data; and the data and report should be readily accessible.	Change of date requires change by Legislature. Quality assurance of the data and education efforts to regulated community are ongoing efforts. All non-confidential data are publicly available on the internet or by requesting a CD-ROM.
2000(L2)	2. DEC should identify options for including data on pesticides applied by private applicators (primarily farmers) in the database and report on these options to the Board.	Including these data in database and reports requires a change in the law by the Legislature.
2000(L3), 2006 (L2), 2006 (L3)	3a. DEC should identify options for including data on target organism and crops to which pesticides are applied in the database and report on these options to the Board. 3b. Mandate reporting of dosage rate and target organism. 3c. Include crop/site of application (for those reporting) and include the crop/site for private applicator sales of general use pesticides intended for agricultural purposes.	Including these data in database and reports requires a change in the law by the Legislature.

SOURCE*	RECOMMENDATION	STATUS
2000(L4)	4. DEC should identify options for including data on pesticides purchased and applied by private citizens in the database and report on these options to the Board, and should review the upcoming reports from Wisconsin and Oregon, which are currently conducting scoping studies of this issue.	The Board reviewed results of Oregon's pilot survey on household use reporting and voted that the information from Oregon did not support including household pesticide use data in New York's reporting requirements at this time.
2006 (L1)	5. Mandate electronic reporting	An electronic reporting option is in place and was emphasized at workshops held throughout the state and by direct mailing to all applicators and sellers. Due to extensive outreach efforts conducted by DEC on a case-by-case basis, we receive more than half of the PRL data in an electronic format. However, to mandate electronic reporting would require a change in law by the Legislature.
2006 (L4)	6. Revise the requirement for the length of time that commercial applicators, sellers of pesticides, and private applicators must maintain records, to a period of not less than 7 years.	This would require a change in law by the Legislature. The law currently states that records must be maintained for a period not less than 3 years.
	Recommendations that have been implemented	
2000(4a)	1. Include a reference in the report to the Governor and Legislature to the Pesticide Poisoning Registry Report from DOH.	Done. The annual report to the Governor and Legislature now includes a reference to the Pesticide Poisoning Registry.
2000(4b)	2. Include a reference in the report to the Governor and Legislature to documents that will provide information on the potential for specific pesticides to leach into the groundwater.	Done. The annual report to the Governor and Legislature includes a reference to documents that provide information on the potential for specific pesticides to leach into the groundwater.
2002-03(3)	3. Include in the biennial reports references to studies that have been stimulated or influenced by the database as examples of how Pesticide Sales and Use Reporting (PSUR) data could stimulate higher-level research.	A list of studies published in the scientific literature that were stimulated or influenced by the PSUR data appeared in the 2003-04 biennial report. The list is being updated in each subsequent report.

SOURCE*	RECOMMENDATION	STATUS
2000(1), 2006 (1)	4. DEC should express data in both pounds of product and pounds of active ingredient	Done. This requires knowing the specific gravity of every product registered in NYS. DEC altered its internal processes to capture this information as products are registered. It has taken several years to capture most of the specific gravities for the 14,000 registered products. DEC made significant progress toward expressing data in both pounds of product and pounds of active ingredient. DEC and Cornell developed a website which provides active ingredient summarizations of the data, starting with year 2003 data.
2002-03(2)	5. Modify the web sites for ease of use and flexibility in creating reports.	The active ingredient website provides a more modern look and feel. It provides multi-year searching capabilities. It also incorporates a number of features that enhance the site's usability. For example, to make it easier to identify which zip codes to use in a search, the user can select all the zip codes that are contained in or partially contained in a county. Documents have been added to the site to assist in pesticide product searches, including FAQs, a data dictionary, and glossary.
2002-03(4)	6. Explore the possibility of using pesticide-poisoning data in conjunction with the PSUR data.	Using pesticide poisoning data in conjunction with the PSUR data would not be productive since about 99% of the pesticide poisoning reports involve improper use of unrestricted pesticides that can be purchased at retail outlets, such as hardware stores and home centers. These products are not included in the PSUR database. However, DOH is exploring the usefulness of the PSUR data for environmental health surveillance as part of the Environmental Public Health Tracking Program.
2006 (6)	7. Explore ways to decrease the time from a researcher's request for the confidential data to receipt of the data.	The Pesticide Committee modified its process to improve efficiency by incorporating a pre-review process whereby 3 members of the committee review the application to determine if it has enough information for the committee to make an informed decision. Without delaying scheduling of a meeting, staff members work with the applicant to obtain any additional information needed before the meeting.

SOURCE*	RECOMMENDATION	STATUS
2002-03(1)	8. Explore whether the data can be aggregated by different categories such as use category, different geographical units, etc.	Done. The active ingredient website contains data aggregated by use category (fungicides, insecticides, herbicides, etc.), as well as statewide, county, zip code or DEC Region.

*Year of survey from which recommendation originated, with number from the original table.

ABBREVIATION KEY

CBO	Community-Based Organization
CRAAB!	Capital Region Action Against Breast Cancer!
DEC	New York State Department of Environmental Conservation
DOH	New York State Department of Health
ECL	Environmental Conservation Law
F&O	Committee on Funding and Outreach, HRSB
HRSB	Health Research Science Board
LEAD	Project Leadership, Education and Advocacy Development of the NBCC
NBCC	National Breast Cancer Coalition
NCI	National Cancer Institute
NIH	National Institutes of Health
PCBs	Polychlorinated biphenyls
PHL	New York State Public Health Law
PN&E	Committee on Program Needs and Effectiveness, HRSB
PRL	Pesticide Reporting Law (Environmental Conservation Law, Article 33, Title 12)
PSUR	Pesticide Sales and Use Reporting
SUNY	State University of New York