

Highlights

Spring 2008



What is a population-based cancer registry?

History and overview of NCCC's Greater Bay Area Cancer Registry

The idea of recording information on all cancer cases within specific communities into cancer registries dates back to the first half of the twentieth century. Originally, registries provided information for describing cancer occurrence and trends, but were later expanded to follow patients so survival patterns could be calculated. In the last twenty years, the role of registries has expanded again to include planning and evaluation of cancer control activities, and to provide information to care for individual cancer patients.

Broadly speaking, cancer research takes place in three types of settings: laboratory, clinic, and community. The Northern California Cancer Center focuses on the community. One specific type of community focus is "population-based," that is, involving all persons within a defined geographic region during a defined time period. This community focus differs from that of many other cancer centers and has gained NCCC national recognition.

Population-based cancer surveillance has a long and distinguished history in the Bay Area. In 1960, population-based cancer registration began in

Alameda County. In 1969, this effort was expanded to include four additional Bay Area counties as part of the Third National Cancer Survey conducted by the National Cancer Institute (NCI). In 1973, all five counties were selected to be part of NCI's ongoing registry program called the Surveillance, Epidemiology, and End Results (SEER) program.

In 1982, NCCC assumed the fiscal operation of this registry from the California Department of Public Health. Over the years, NCCC's cancer surveillance operations have now grown to include the five-county Bay Area region operating as the San Francisco Bay Area SEER, and the four counties in the San Jose and Monterey regions. Together, these registries are known as the Greater Bay Area Cancer Registry (GBACR) and submit nearly 29,000 new cancer diagnoses to the SEER program and to the state each year.

GBACR consists of two components: (1) Registry Operations and (2) Surveillance Research. Registry Operations is responsible for collecting and managing the data, while Surveillance Research is responsible for conducting research using cancer registry data and examining patterns in the Greater Bay Area.

Information collected by GBACR is used to better understand cancer occurrence and survival. The registry includes data on cancer type, extent of disease, treatment and survival and basic demographic information, like age. Because the population of the Greater Bay Area includes persons of many different racial/ethnic and socioeconomic backgrounds, the registry data provide opportunities to learn how such characteristics may be related to cancer causes, mortality, care, and prevention.

Every year, GBACR releases its report on Annual Cancer Incidence and Mortality in the Greater Bay Area. This year's report is scheduled to be released at the end of April. ●

More Information

▶ If you would like to be notified by e-mail when this year's report is available, please contact sheena.cresswell@nccc.org.





Harmful mutations are most common in breast cancer patients who are diagnosed at a young age.



Harmful mutations in the BRCA1 gene are relatively rare, but women who have such a mutation are *about five times more likely to get breast cancer in their lifetime than women who do not have such mutations. Women with a BRCA1 mutation are also three times more likely to get ovarian cancer in their lifetime.*



Esther M. John, Ph.D.

Gene mutation more common in Hispanic, young black women

NCCC scientist leads groundbreaking study

Esther John, Ph.D., was featured in the December 26, 2007 issue of the *Journal of the American Medical Association* for her work on one of the largest multiracial studies of mutations in a gene linked to breast and ovarian cancer. The study explored whether breast cancer patients of different race/ethnicity are more or less likely to carry a harmful mutation in a breast cancer gene called BRCA1.

Genes are inherited from our parents and their function, among other things, is to regulate the growth of cells and repair damaged DNA in our body. If these genes are damaged, or what we call mutated, they may not perform these functions. BRCA1 is a gene that interacts with many other genes and plays an important role in the regulation of cell cycles and DNA repair. Mutations in the BRCA1 gene greatly increase the risk of developing breast or ovarian cancer.

The researchers knew from previous studies that breast cancer patients are more likely to carry a BRCA1 mutation if: 1) they were diagnosed before age 35 years, 2) have a strong family history of breast or ovarian cancer (multiple family members with breast or ovarian cancer), or 3) are of Ashkenazi Jewish ancestry. Most of these studies included non-Hispanic white women. Therefore, little information was available on how common harmful mutations are in other populations such as Hispanic, African American or Asian American patients.

Harmful mutations in the BRCA1 gene are relatively rare, but women who have such a mutation are about five times more likely to get breast cancer in their lifetime than women who do not have such mutations. Women with a BRCA1 mutation are also three times more likely to get ovarian cancer in their lifetime.

The study was conducted by analyzing blood samples from over 1,700 breast cancer patients currently participating in the Northern California Family Registry for Breast Cancer. The patients were either diagnosed before age 35, or they had a family history of breast or

ovarian cancer. Also included were a random sample of patients who were diagnosed at age 35 to 64 who did not have other family members with breast or ovarian cancer.

The research team found that harmful mutations in the BRCA1 gene were more common among Hispanic breast cancer patients than among non-Hispanic white patients, and they were least common among Asian-American patients.

The researchers also found that harmful mutations were most common in patients who were diagnosed at a young age. This was true for all racial/ethnic groups. In patients diagnosed before age 35, the prevalence was particularly high in young African American patients: 16% or 16 in 100 patients had a harmful BRCA1 mutation, compared to 8.9% in Hispanic patients, 7.2% in white patients without Jewish ancestry, and 2.4% in Asian-American patients.

In 1995, the National Cancer Institute established the Breast Cancer Family Registry (BCFR) at six medical research institutions in the US, Canada and Australia in order to facilitate interdisciplinary research on the genetics of breast cancer. Over the last thirteen years, the Northern California Family Registry, along with its five international partner sites, have contributed to the creation of a unique and powerful resource that can address many of the unanswered questions on the causes and prevention of breast cancer. ●

More Information

- ▶ To find out more about Dr. John's study and to see her research, visit our website at www.nccc.org/Esther_John.
- ▶ To find out more about the Northern California Family Registry for Breast Cancer, visit our website at www.nccc.org/bc-family-registry.

Scientist Profile

Scarlett Lin Gomez, Ph.D.

Interview with Dr. Gomez, research scientist, mother of two and avid cook

What led you to become an epidemiologist?

I started out on a course for medical school, but after my undergraduate work, I worked as a chemist with a man who inspired me to pursue public health based on his experience working in Nepal through the Peace Corps. He really helped me to reflect on the health disparities among populations living in parts of the world that don't have the basic necessities like clean water or vaccinations. At the School of Public Health at Michigan, I worked with a professor named David Schottenfeld who "wrote the book" on epidemiology and I truly found my passion in cancer epidemiology.

What are you working on now?

We are currently wrapping up a study in which we found that by the late 1990's, the number of Asian women still getting mastectomies was more than double that of non-Asians, with even greater numbers in some Asian subgroups.

What do you find most interesting about studying Asian populations at the NCCC?

What is exciting and unique about doing population-based research of Asians and cancer at the Northern California Cancer Center is our access to registry data. Our registry is one of the richest sources of data on Asians in the country. In addition, the high quality of the data allows us to ask more in-depth research

questions and look at patterns within smaller subgroups of Asians. Working with this database gives us the ability to see striking patterns and disparities among different groups that might otherwise be missed.

What do you like the most about working at NCCC?

For me, the Northern California Cancer Center is an ideal place to work because there is a lot of flexibility. I am able to study what I am interested in and I have the support to develop research programs that align with those interests. Working here is very much like working at an academic institution, but the major difference is that, as researchers, we are able to choose the pace at which we want to progress through our careers. Also, while some institutions are trying to become more "mommy-friendly," here at NCCC it is already a built-in part of the culture; this is a large part of what has attracted many female researchers to our team.

What do you do when you're not at work?

I spend time with my new baby and my daughter. I also like to cook. My parents were both cooks, so I feel really at home in the kitchen. One of my favorite things is to go out to a restaurant, try new things, and then come home and try to recreate what I liked. If I weren't a research scientist, I'd probably be a caterer. ●



Recently, I cut off my hair (about 12 inches in length!) and donated it to the Childhood Leukemia Foundation. I can imagine that hair loss due to cancer treatment can be devastating for children, and I felt that this was a simple way for me to make a big difference in some child's life."

Scarlett Lin Gomez, Ph.D.



More Information

- ▶ For more information about Scarlett Lin Gomez and her research, visit her webpage at www.nccc.org/scarlett_gomez.

Dr. Gomez's New Study

Equality in Breast Cancer Care

It has been said that cancer doesn't discriminate. Sadly, that is not always the case when it comes to cancer care. In an effort to educate and inform both the public and medical community, the Northern California Cancer

Center is conducting the Equality in Breast Cancer Care Study to learn more about how women from diverse cultural and ethnic backgrounds go through the experience of being diagnosed and treated for breast cancer.

"We are very excited to have the opportunity to conduct this novel inquiry into why disparities exist among certain groups of women diagnosed with breast cancer," said Dr. Scarlett Lin Gomez. "We hope that our findings will ulti-

mately help to improve how cancer treatment is given in various populations and to help ensure that all women, regardless of race, language, income or any other factors, have an equal opportunity for treatment."

NUMMI joins fight against breast cancer

Fremont plant raises breast cancer awareness and funds for NCCC



Team Member Freda Parks

This past October, the New United Motor Manufacturing, Inc. (NUMMI) plant in Fremont, together with United Auto Workers Local 2244, commemorated National Breast Cancer Awareness Month for the first time. Their efforts promoted awareness of detection and prevention and raised funds for breast cancer research and education at the Northern California Cancer Center. NUMMI employees, known as “team members,” were encouraged to wear pink throughout the month to honor those with breast cancer and support the fight against the disease. To benefit NCCC, team members sold raffle tickets, “Think Pink” bracelets, pins, and bouquets of pink carnations.

NUMMI is the pioneering joint venture of General Motors Corporation and Toyota Motor Corporation. Established in 1984, NUMMI has grown to become a company of 5,440 team members and has a collaborative partnership with the United Auto Workers.

“The enthusiasm with which NUMMI team members and United Auto Workers carried out this month-long effort to fight breast cancer is inspiring,” said Northern California Cancer Center Chief Executive Officer Donald Nielsen. “We extend our heartfelt thanks to all involved who worked toward making this campaign a success at the company’s Fremont plant. I hope that more companies will follow NUMMI’s lead in fighting cancer as a local corporate citizen and partner of NCCC.”

The team members who shared their stories about breast cancer did so throughout the month of October. Diagnosed with breast cancer on her birthday, Freda Parks was very afraid because she was not initially knowledgeable about the disease. But once she had information, she knew she would be a survivor.

“Faith, hope, TLC, a positive attitude, my God, and my family, were vital to my survival,” she said. “I now celebrate life every day.”

Now a cancer survivor, Freda hopes

that her story will encourage and educate women about the importance of regular self exams to promote early detection. Other team members who shared their stories include a man whose daughter, now a cancer survivor, was diagnosed with breast cancer when she was 5 ½ months pregnant, and a woman whose breast cancer diagnosis motivated her to replace her fear with knowledge.

The month-long effort culminated with a health fair and fundraiser called Fight Against Breast Cancer in the plant’s main cafeteria on October 26th. Representatives from NCCC and a nutritionist from Washington Hospital in Fremont attended the event to provide information and resources and to answer questions. At the health fair, NUMMI team members who had personal experiences with cancer were eager to learn about NCCC’s cancer survivorship conference in December and expressed their interest in attending the event. At the close of the event, an NCCC representative presented certificates of appreciation and commemorative bracelets to the team members who had shared their personal stories about their cancer experiences.

The Northern California Cancer Center was the sole beneficiary of the over \$8,100 donation by NUMMI and its team members. ●

CEO Column

By NCCC CEO
Donald Nielsen, Ph.D.

Everyone is talking about the economy; it is the focus of conversations in the media and around the kitchen table. In these difficult economic times, you may like to know about some non-financial ways to fight cancer. In this issue of Highlights, we give you some tips to help you prevent cancer by eating the right foods

(page 6). You can participate in a scientific study, like Dr. Esther John’s BRCA1 investigation (page 2). If you have cancer, you are already contributing significantly, as we describe in the lead article on the population-based cancer registry. You can even make a difference by contributing your hair, as NCCC’s Dr. Scarlett Gomez

does routinely for wigs for kids with cancer (page 3). NCCC is appreciative of the many ways that the community fights cancer. On page 5, we note that NCCC also gives back to the community in several ways beyond fulfilling our mission, by adding millions of federal dollars to the local economy, providing jobs, and

Interim Development Director, Rebecca Chekouras, is helping NCCC develop new revenue streams to fight cancer.

Good Partners, Strong Community

As social enterprises, eco-friendly green sourcing, and SRI (social return on investment rather than just ROI—a measure of financial gain) have come to dominate public discourse and make their way onto today’s business agendas, nonprofits make increasingly good business partners in the for-profit sector.

The Northern California Cancer Center is an especially good partner here in the Bay Area where all businesses—large and small—contribute to the overall vitality of the area’s dynamic appeal. Businesses want a great place for their employees to live; it helps them attract and keep the best talent. They also want a solid customer base that will buy their products and services.

As one of Fremont’s largest non-profits, NCCC helps businesses meet these goals in a number of ways. At the same time, it advances what we know about who gets cancer, why certain cancers occur more predominantly in certain populations, and

it offers helpful information about surviving or preventing cancer.

We contribute to the Bay Area’s reputation for academic excellence. Our organization employs 145 people, including a research staff of 12 PhDs and the research teams they lead. NCCC senior researchers often work with area academic and health care organizations, adding insight to some studies and leadership to others.

These collaborations with area universities and teaching hospitals help maintain a critical concentration of world-class researchers that add up to Bay Area academic excellence in cancer studies.

Important to the area’s tax base, NCCC brings millions of dollars of federal money to the area every year. When NCCC researchers win a federal contract for a new or continuing study, those federal dollars come here as an infusion of new capital. They become salaries, equipment purchases, vendor contracts, and other study-related purchases. In the last five years, NCCC scientists

have been awarded over 70 grants totaling more than \$52 million in new money in the local economy.

Employee health is an important factor in the overall health of a business. Each year, California businesses lose millions of dollars in productivity when employees become sick or need to leave the workforce to care for a sick spouse or family member. By creating and delivering workplace awareness and prevention programs, NCCC helps reduce the economic burden of cancer, helping to keep employees healthy and productive.

Like any business, the Northern California Cancer Center pays rent, buys paper, fax machines, and copiers, purchases computers and telecommunications, and has other expenses. Our product happens to be cancer research and we do the work as a nonprofit agency. We’re like a two-fer: we contribute to the area economy and understand the needs of our business partners, and we help keep the Bay Area, and

all of California, healthier while we’re at it.

Rebecca Chekouras is Interim Development Director for NCCC. With over a 12 year career in fund raising, communications, and strategic planning consulting, she has worked with Bay Area clients of all sizes, from the University of California to Kitka, a women’s vocal ensemble. For more information about how your business can benefit from allying with NCCC, please contact her at 510-608-5051 or rebecca.chekouras@nccc.org. ●



Nonprofits are some of the largest businesses in the Bay Area, from the University of California to the symphony and ballet.”

Rebecca Chekouras

contributing to the Bay Area’s reputation for scientific and academic excellence. NCCC is a sound investment of your time or your money. If you want to contribute through your online purchases, take a look at our last page and see how you can donate through eScrip and Maatiam, which do not cost you a penny.

Contributions of all kinds help us in our mission to reduce the burden of cancer.

In this issue, we have included links to pages on our website so you can check back frequently to learn about new research studies and findings, community education events, and our partnership activities with the

Stanford Cancer Center. If you are not already signed up to receive this newsletter, we encourage you to refer to the link on the back page to become a regular subscriber.





Antioxidants also help reduce the risk of other chronic diseases, says Tim Radak, Senior Research Program Manager and Registered Dietician.

Staying Healthy

Why some foods can help prevent cancer

Oxidation is the starting point of most chronic diseases, as well as the aging process

We've all heard recommendations to eat the right food to maintain optimal health, reduce chronic disease and manage existing disease. In their 1981 landmark analysis of the causes of cancer, Doll and Peto estimated that 35% of US cancer deaths were attributable to dietary factors. The American Cancer Society has said that roughly 186,550 of the 559,650 cancer deaths in 2007 could be linked to poor nutrition, physical inactivity, being overweight, and obesity.

One good way of reducing your cancer risk through food is by adding antioxidants to your diet. Antioxidants are found in many foods (of both plant and animal origin) and some also make up common vitamins and minerals. For example, Beta Carotene (vitamin A), vitamin C, vitamin E, Selenium, Copper, and Zinc are all well known antioxi-

dants. Some plant foods are being investigated for other antioxidants beyond the traditional ones. For example, pomegranates have three types of antioxidants - tannins, anthocyanins, and ellagic acid.

Antioxidants serve to prevent or reduce oxidative damage to cells, proteins, and DNA by protecting other compounds from damaging reactions that involve oxygen. When oxygen is metabolized, free radicals are formed. This process of 'oxidation' is a normal biological effect that is potentially damaging. Think of metal rusting as a form of oxidation, which weakens the metal. The body 'weakens' or gets damaged due to oxidation and this process can contribute to the cause of many diseases like cancer. Oxidation is the starting point of most of chronic diseases, as well as the aging process.

Fortunately, the body has systems set up to take care of this (we wouldn't be here if it didn't) and diet plays a role in strengthening this process as well as taking on the oxidative process directly. According to a recent study, the top 14 foods/beverages that contain antioxidants are: blackberries, walnuts, strawberries, artichokes, cranberries, brewed coffee, raspberries, pecans, blueberries, cloves, grape juice, unsweetened baking chocolate, sour cherries, and red wine.

The Bay Area Endometrial Cancer Study led by NCCC research scientist Pam Horn-Ross found that among overweight women, who are at greater risk for endometrial cancer, soy-rich foods and physical activity were potentially beneficial. ●

New grants and contracts (partial list): January 1, 2007 through December 31, 2007

PRIME AWARDS

Principal Investigator	Award/Title	Funding Agency
Sharon W. Davis, MPA	Training workshops to promote cancer education services.	Alameda County Health Care Services Agency
Theresa Keegan, Ph.D.	The impact of the built environment on the risk of breast cancer.	National Cancer Institute
Peggy Reynolds, Ph.D.	Breast cancer risks in California nail salon workers.	California Breast Cancer Research Program
Ellen Chang, Sc.D.	Aspirin use, genetic variation, in aspirin related-genes, and Hodgkin lymphoma risk.	National Cancer Institute
Rudy Rull, Ph.D.	Trends in cancer incidence by single year of age among the oldest-old population.	National Cancer Institute
Sally Glaser, Ph.D.	Epstein-Barr Virus and breast cancer: extending promising work.	Safeway Foundation
Ingrid Oakley-Girvan, Ph.D.	Is bone health being neglected among breast cancer survivors? A web-based study.	Stanford University
Peggy Reynolds, Ph.D.	Pooled analysis of very low birth-weight and childhood cancers.	University of Minnesota
Dee West, Ph.D.	Study of genetic mutation carriage in Chinese populations with breast cancer.	National Cancer Institute

NCCC events draw new donors and help cancer survivors



Stanford Cancer Center

Stanford and Board Member Hilary Newsom Callan raise money for NCCC

Fundraising

Stanford recently announced that the Stanford School of Medicine has allocated \$250,000 per year for three years to the Northern California Cancer Center in an effort to boost the ongoing collaboration between their organization and the NCI-designated Stanford Cancer Center. The Northern California Cancer Center will use the funding for recruitment and development of the combined NCCC/Stanford Cancer Center Outreach Program.

NCCC received \$5,000 from a party on November 20th to celebrate the opening event of Martin + Osa, a boutique of women's and men's apparel at the Westfield San Francisco Centre. Event co-chairs were NCCC Board Member Hilary Newsom Callan, Geoff Callan, San Francisco Mayor Gavin Newsom and Jennifer Siebel.

Hilary also organized a cocktail party and auction to benefit NCCC on October 22nd at Hotel Vitale's Americano Restaurant in San Francisco. The event, "An Evening of Sparkling Conversation," included a live auction of fifteen-minute conversations with television, radio and sports celebrities, and was very successful, raising nearly \$25,000 in unrestricted funds for NCCC. Hilary and Mayor Newsom also spoke about NCCC and promoted the event on October 19th in an interview on Alice Radio (97.3 FM).

Cancer Conferences

The Bay Area's first cancer survivorship conference on December 1st, 2007 in San Francisco drew 335 attendees. The program was very successful with a diverse audience, excellent speakers, and positive evaluations. The conference presented information about medical, psychosocial and financial issues for cancer survivors. The two major medical issues addressed were: 1) late term side effects (including cardio toxicity, joint pain, and sexual function); and 2) transition issues from oncology care to primary care.

The 7th Annual Allison Taylor Holbrooks/Barbara Jo Johnson Breast Cancer Conference, was held on March 1, 2008 in San Francisco. The conference provided updated information about breast cancer treatment and quality of life issues to 180 attendees. Topics for the general session included clinical updates, genetics and family risk, health changes and the challenge of change in each of our lives, and personal perspectives about living with this disease – the perspectives of both a mother and a daughter. Both conferences were audio taped and can be heard on our website at www.nccc.org/education_programs. ●

More Information

- To learn more about the Stanford Cancer Center / Northern California Cancer Center partnership, visit our website at www.nccc.org/stanford.

About the Highlights Newsletter

Highlights is published by the Northern California Cancer Center

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Sign up for eScrip

Inside

A Simple Way to Use Everyday Shopping to Fund Cancer Research

The Northern California Cancer Center recently registered with eScrip so that purchases you make every day at local merchants can be part of the cancer solution. eScrip is a safe and easy way for a lot of people to make small, everyday donations that will add up to a big contribution in the fight against cancer. eScrip has partnered with dozens of

merchants to create a safe and secure system that rewards you for shopping with them by funneling a fraction of the purchase amount to the nonprofit of your choice. It's simple. All you need to do is register your grocery club card, credit or debit card, and a small percentage of every purchase will support the Northern California Cancer Center's groundbreaking work. No hassle, no money out of your pocket.

Step 1

Log on to www.escrip.com and go to "sign up."

Step 2

Designate the Northern California Cancer Center as the nonprofit you want to support (you can type in our name or use our Group ID 500018103, then just follow the easy directions).

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