

Is screening for breast cancer with mammography justifiable?

Hoda Anton-Culver, Ph.D.

THE ABOVE QUESTION POSED BY GÖTZSCHE and Olsen in their publication in *The Lancet* (*Lancet*, 355:129-134, 2000) received enormous attention from the national media, scientists, breast cancer survivors, and the general public.

In reply to a 1999 study showing no decrease in breast cancer mortality in Sweden, the authors decided to review the quality of the mammography trials and a Swedish study that analyzed pooled results from previous studies (a meta-analysis). They also performed a meta-analysis themselves.

The authors reported a systematic review of eight randomized trials of screening mammography. The following trials were included in this study: New York, Edinburgh, Canada, Malmo, Stockholm, Goteborg, Kopparberg, and Ostergotland.

The authors judged that six of the eight trials were inadequate for the meta-analyses because of imbalances in selection and randomization, particularly by age, and that these trials used flawed methods, particularly as far as the randomization is concerned. Results from the two trials that they believed were correctly randomized showed that there was no effect on breast cancer mortality or on overall mortality. Therefore, the authors conclude that screening by mammography for breast cancer is unjustified.

One of *The Lancet* editors, Horton, published a commentary on the controversial political aspects of the Gøtzsche and Olsen publication (*Lancet*, 358:1284-85, 2001). In their reply to this commentary (*Lancet*, 358:1340-42, 2001), Gøtzsche and Olsen indicated that they obtained a Cochrane review, which confirmed their findings that mammography screening is not valuable and breast cancer mortality as an outcome measure is misleading. They also showed that screening leads to more aggressive treatment and more unnecessary surgical intervention, particularly on lesions that may not always develop into invasive breast cancer. They

concluded that "any hope or claim that screening mammography with more modern technologies than applied in these trials will reduce mortality without causing too much harm will have to be tested in large well conducted randomized trials with all-cause mortality as a primary outcome."

A committee of the Institute of Medicine of the National Academy of Sciences reviewed the

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From the Director's Desk

Questions that keep me up at night

Mhel Kavanaugh-Lynch, M.D., M.P.H

RECENTLY, THE HEADLINES SEEM FULL of breast cancer news. "Conflicting Breast Cancer Studies Creating Unsettling Uncertainties", "Study Sets Off Debate Over Mammograms' Value", "Cancer Study Finds Support Groups Do Not Extend Life", "Marin has highest breast cancer rate in U.S.--20% rise in cases in one year a mystery"

Every time new research results are released, they seem to conflict with what we thought we already knew. How are we to make decisions and act? Should I have gotten a mammogram last year because everything I read told me that early detection was the key to survival? Should I not get one this year because I read that mammograms do not save lives? If I don't get one and next year am diagnosed with advanced breast cancer, will I be told that, if only I had had a mammogram, I'd have a much better prognosis? Or that maybe if I did not live in Marin County, I might not even have developed breast cancer?

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An Advocate's View

Introducing Optical Spectroscopy: A New Cancer Detection Method

Diana Chingos

WHILE THE DEBATE CONTINUES AS TO whether mammography impacts breast cancer survival rates, one fact looms large. The need persists for better imaging options that can detect breast disease at its very earliest stage, irrespective of breast density, patient's age and menopausal status, and type of tumor and its size—imaging options that inarguably impact patient survival.

Any new technology would best serve patients if it conferred no radiation or other toxicities and was compression and pain free. Achieve this at a reasonable cost and low error rate and you can really increase women's confidence in breast cancer detection methods. You get down to the bottom line: saving lives and sparing breasts!

In an attempt to address current limitations in breast cancer screening, the State of California Breast Cancer Research Program granted funding to an investigator with a non-invasive, non-toxic, and highly innovative potential solution to this need. The approach presents a new algorithm for looking at breast changes in a high-tech yet patient-friendly way.

Scientist and Associate Professor Dr. Bruce J. Tromberg, Director of the Laser Microbeam and Medical Program at UC Irvine's Beckman Laser Institute, has developed a handheld laser-based scanner that can detect subtle physiological changes in breast tissue—changes that possibly indicate the beginning of breast cancer. The laser breast scanner uses a technique known as "frequency domain diffuse optical spectroscopy." This optical technique specifically detects changes in water, fat, and hemoglobin (iron-containing center of red blood cells) concentration that can signal alterations in tissue. It is highly sensitive to subtle changes, such as cellular growth and proliferation of the blood vessels surrounding a tumor.

"This scanner yielded quantitative information about changes in breast tissue that cannot be

obtained with noninvasive techniques like mammography, MRI [magnetic resonance imaging], or ultrasound," Tromberg said. "Because we can obtain precise information about changes in the way the components of breast tissue function, we hope to be able to detect precancerous and cancerous conditions earlier, especially in younger women, whose breast tissue can be too dense for mammography. Women who have gone through menopause and are receiving hormone replacement therapy also can have dense breast tissue and may benefit from the scanning technique."

The question of mammography's usefulness extends beyond its ability to detect tumors in young women or menopausal women on hormone replacement therapy (HRT). It can fail to detect (a) tumors in high-density breast tissue, irrespective of age and hormone use, (b) lobular carcinomas, and (c) highly aggressive "interval" cancers. Additional concerns are the danger of radiation exposure on young breast tissue, addressed in a growing body of literature, and the difficulty of identifying women with BRCA1 mutations and AT heterozygotes, which can require repeated screenings just to become obvious to the radiologist. The detection device of the future must address these shortcomings.

In his efforts to create a new detection method, Dr. Tromberg focuses on examining the consumption of oxygen by tumors versus healthy cells and the recruitment of blood

vessels around breast lesions (angiogenesis). He is also looking at the transition of postmenopausal breast tissue from collagen to fat and the breakdown of cells in the extra-cellular matrix—how breast cancer cells invade healthy tissue. His approach is to analyze the entire breast, looking for global changes that are

characteristic of breast disease.

In one study, Dr. Tromberg and his colleagues scanned breast tissue from 28 volunteers (ages 18 through 64), measuring how fat, water, and

"... a new algorithm for looking at breast changes in a high-tech yet patient-friendly way."

hemoglobin changed as women aged. The handheld unit—slightly larger than an ultrasound device—was able to determine the components of breast tissue regardless of its density or the woman’s age, hormone levels, and menopausal status. It might also prove valuable in determining which patients are at high risk of recurrence post treatment, for monitoring the impact of chemotherapy on breast tissue, and for measuring the efficacy of chemoprevention strategies.

His work now includes measurements of locally advanced tumors with the goal of determining how individuals respond to presurgical, neoadjuvant chemotherapy. In addition, patients are recruited from the STAR Trial to determine the effects of chemoprevention drugs like tamoxifen and raloxifene on breast tissue. Women interested in participating in this research can contact Montana Watna, mwatna@laser.bli.uci.edu, at 949/824-9265 or Donna Jackson at 714/456-8549.

Of course it isn’t enough to visualize or characterize the changes occurring in the body. They must be quantified for medical and research purposes. Dr. Tromberg and his team are investigating and comparing units of measurement with the best utility.

While this form of optical spectroscopy isn’t ready for prime time yet, going forward it has the potential to become a powerful diagnostic tool that could both detect initial cancer and determine which patients are at high risk of recurrence after treatment. Optical spectroscopy might also be used to monitor the impact of chemotherapy on breast tissue and to measure the effectiveness of chemoprevention strategies such as giving drugs like tamoxifen to high-risk healthy women.

The grant from the California BCRP has enabled Dr. Tromberg to build another scanner for use at University of California, San Francisco. He seeks to increase the number of sites that will conduct the research so that more women can be enrolled in these studies. At \$75,000 the equipment is much more reasonable than any of the currently used methods, and it is designed for convenient use as a bedside device. From this advocate’s optical perspective, it’s all looking good. There’s one more bonus: it makes one feel as if watching all those Star Trek episodes was time constructively spent!!



The laser breast scanner specifically detects changes in water, fat, and hemoglobin (iron-containing center of red blood cells) concentration that can signal alterations in tissue.

Handheld laser-based scanner is slightly larger than an ultrasound device.



Designed for convenient use as a bedside device

BCRP Award

Dr. Tromberg received a \$50,000 IDEA award from BCRP in 1996 to begin developing the optical density scanner and a \$500,000 Translation Collaboration Research award in 2000 to refine the scanner and bring it into the clinic.



NCI statement on mammography screening

The NCI has carefully considered the issues raised in *The Lancet* review. It has also considered the recent deliberations of the PDQ Screening and Prevention Editorial Board and of the U.S. Preventive Services Task Force and has consulted with a variety of experts in the field in order to determine whether a change in its position is warranted.

After due consideration, NCI continues to recommend that:

- ❖ Women in their 40s should be screened every one to two years with mammography.
- ❖ Women aged 50 and older should be screened every one to two years.
- ❖ Women who are at higher than average risk of breast cancer should seek expert medical advice about whether they should begin screening before age 40 and the frequency of screening.

Complete press release is available at http://newscenter.cancer.gov/press_releases/mammstatement31jan02.html.

Mammography

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same evidence as Gøtzsche and Olsen but reached the opposite conclusion (Henderson IC, Regular Mammograms Remain a Crucial Tool, *NY Times*, Feb. 9, 2002). According to committee member Dr. I. Craig Henderson, they concluded that, "the preponderance of the evidence suggests that if a woman without any signs or symptoms of breast cancer has mammograms at regular intervals, she will substantially decrease her risk of dying from this disease." The reason for the differing conclusions is that by excluding certain trials, Gøtzsche and Olsen introduced new biases to their study. "When all the results are pooled, the data show a clear benefit from mammography."



Discussion

Hoda Anton-Culver, Ph.D.

IT IS UNFORTUNATE THAT THE MAJORITY OF the screening mammography trials included in the meta-analyses by Gøtzsche and Olsen are flawed using their strict criteria for adequate randomization and inclusion. The main issues are related statistical approaches and using age and related measures as markers of adequacy of a trial. These statistical analyses were done on a group basis and have little value at this time on the practice of mammography screening for women at the individual level. However, the analyses provide a rationale for future high quality screening trials. The results of the meta-analyses show the importance of appropriate and vigorous scrutiny of methodology, strict adherence to protocol, and unbiased randomization. These recommendations must apply to not only mammography screening but also to other methods of early detection of breast cancer.

The eight trials included in these meta-analyses are very heterogeneous in many ways, including their populations, time frame, sample size, and design. Consequently, the rationale to

pool the data from all or some of the trials is questionable. In addition, because of the large sample sizes in each trial, very small differences between the screening and control groups, particularly in age and other related variables,

were found to be statistically significant. The statistical differences were used by the authors to judge the adequacy of the trials, even when the absolute differences are meaningless in terms of their biological effect.

The claim that mammography screening leads to over-treatment and consequently higher breast

cancer related deaths is a complex issue that involves multiple factors, including the treatment decisions. Mortality as an outcome measure of the value of mammography screening is invalid. Evaluation of mammography screening should take into account the data on the recommended clinical management of the patient, which vary widely by geographic area, insurance availability, time, socio-economic status, and specialty of the treating physician. Perhaps outcome measures other than mortality are needed for the evaluation of the effectiveness of mammography and other methods of early detection of breast cancer.



What makes trials randomized?

In randomized trials, patients are arbitrarily assigned to a treatment or control arm of the study. This way, in an ideal situation, researchers distribute factors that may influence the outcome of the study, such as differences in age, socioeconomic status, or even hidden factors, evenly between the two groups and therefore end up with the treatment being the only significant difference between the two populations.

Full text of the Lancet articles mentioned can be found on their web site at <http://www.thelancet.com>.

“When all the results are pooled, the data show a clear benefit from mammography.”

Questions

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These are not new questions, yet research still hasn't given us clear answers. Maybe the answers are not clear because the questions are not clear. For example, if breast cancer is not a single disease, but rather a group of very different conditions that only look similar, the question "does mammography prevent deaths from breast cancer?" makes as much sense as the question "does sunscreen prevent all skin redness (including blushing, rashes, rugburns)?" Maybe the answers are not clear because we are asking the questions in the wrong way or are using the wrong tools to solve these mysteries. These questions keep me and all of us at the California Breast Cancer Research Program up at night.

The reality is that headlines, and even most full articles, summarize research in a simplistic

manner, which obscures the uncertainty that lies in any single study's results. What you think we know is, in fact, not "known" as certainly as it would appear from most of what we read.



BCRP aims, through this newsletter and other publications (such as "Advances in Breast Cancer Research 2002", – coming soon!), to provide a clearer picture of what our research does, and does not, tell us. And we continue to search for ways to find answers better, faster, and with more certainty.

Mel Kavanaugh-Lynch



Evaluating BCRP's postdoctoral fellowship awards

Janna Cordeiro, M.P.H.

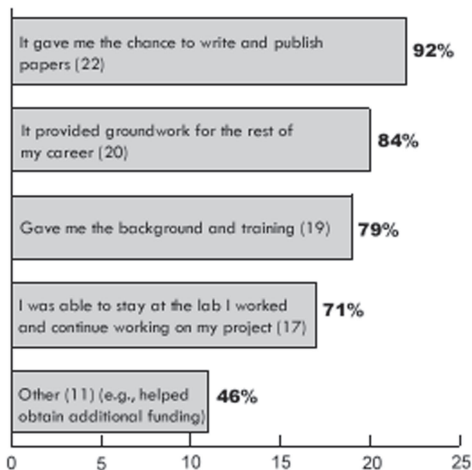
BCRP'S POSTDOCTORAL FELLOWSHIP Awards Program, designed to prepare researchers for long-term careers in breast cancer research, is successfully meeting this goal, award recipients say. In the summer of 2001,

BCRP program evaluation staff interviewed 39 researchers who were BCRP postdocs during the first four years of the program. Among the findings:

Postdoctoral Fellowships – Making a Difference

For a copy of the report detailing the findings from the study evaluating BCRP's Postdoctoral Fellowship Awards, please contact Janna Cordeiro, Program Evaluator, at (510) 987-9841 or janna.cordeiro@ucop.edu or visit our website at <http://www.ucop.edu/srphome/bcrp/>.

How did the BCRP fellowship award help you to stay in breast cancer research?
N=24



- ❖ Of all people interviewed, 67 percent are still in breast cancer research—with 44 percent reporting that they used the BCRP fellowship to gain first-time experience in the field.
- ❖ More than half of those surveyed said that the fellowship helped them to improve their research skills, increase their self-confidence, and ultimately gain a higher level job—with about half reporting that the fellowship helped them to secure a faculty position in research.
- ❖ About 80 percent of the BCRP-funded postdoctoral projects helped either the postdocs or a colleague to gain additional funds to continue research begun with BCRP funding.

Evaluating BCRP Fellowships

Continued from p. 5

The researchers have an impressive publication record as well—as a group they have published over 108 articles in peer-reviewed publications. What’s more, over 80 percent of the postdocs in the survey said that they had published at least one paper based on BCRP-funded research.

Since 1995, the BCRP has invested almost \$6.4 million in 94 postdoctoral awards, two-year grants of up to \$80,000 each. This is about a fifth of BCRP’s total awards budget.

“The postdoctoral years are pivotal to one’s scientific development and career. I’m extremely pleased that the BCRP has established a high quality postdoctoral program to help guide the next generation of breast cancer researchers toward eradicating the disease.”

Dr. Teresa Burgess, chair of the California Breast Cancer Research Council and Research Scientist, Cancer Biology at Amgen, Inc.



Profiles of Two BCRP Postdoctoral Fellows

Lauren John

Karyn L. Angell, Ph.D.

BREAST CANCER STRIKES MANY WOMEN AT A time in their lives when they are busy caring for others. Some women are responsible for teenagers, some are caring for aging parents, and some are caring for both older and younger family members. With all of these responsibilities, are women paying enough attention to their own health care?

That was one of the questions explored in clinical psychologist Karyn Angell’s BCRP funded study entitled, “Effects of Stress and Support on Delay in Cancer Treatment.”

“Knowledge about the influences of stress and care seeking behavior will provide impor-

“ women who experienced severe life events . . . were seven times more likely to delay treatment for breast cancer ”

tant information for interventions aimed at getting women into treatment sooner, possibly leading to better prognoses and potentially lowering breast cancer mortality rates,” she wrote in her award application to BCRP.

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Catherine Carpenter, Ph.D.

CAN WOMEN REDUCE THEIR RISK OF BREAST cancer by exercising regularly? These days, with activists calling for more focus on preventative medicine, a number of breast cancer researchers are exploring this issue. But back in 1995, when BCRP funded University of Southern California (USC) researcher Catherine Carpenter’s work in this area, it was a relatively new idea.

“There was a lot of evidence from population studies that suggested that women who engage in strenuous physical activity are at reduced risk of breast cancer . . . and identification of physical activity as a possible protective factor among postmenopausal women could provide an intervention tool to reduce breast cancer among women in California,” Dr. Carpenter wrote back in 1994 in her grant application for a postdoctoral fellowship.

In her final report in 1998, she concluded, “results indicate that exercise and maintenance of a stable weight during adulthood are important ways that women can reduce their chances of developing breast cancer after menopause.”

“Today most of the exercise papers coming out have cited our paper,” Carpenter says. “In fact, the BCRP grant was essential to everything that I am doing now,” she adds. Today, Dr. Carpenter continues to do breast cancer research at the University of California at Irvine, where she is now a faculty member. Her personal exercise routine includes work with weights and aerobics.

A decade ago Dr. Carpenter's dissertation focused on lung cancer research. But she decided to apply for a BCRP grant after being inspired by research done by University of Southern California School of Medicine breast cancer researcher Dr. Leslie Bernstein. Dr. Bernstein's hypothesis

“ . . . exercise and maintenance of a stable weight during adulthood are important ways that women can reduce their chances of developing breast cancer . . . ”

was and is that physical activity offers a modifiable lifestyle choice with the potential to substantially reduce a woman's lifetime risk of breast cancer. In 1994 Dr. Bernstein published a study in the Journal of the National Cancer Institute, indicating a link between physical exercise and reduced risk of breast cancer in younger women.

Drs. Carpenter and Bernstein decided to study an older population, and BCRP's three-year fellowship, which was granted for 1995-1998, enabled Carpenter to do that.

"Leslie Bernstein became my mentor thanks to the fellowship grant," she says. Today the two

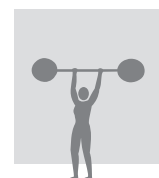
continue to collaborate on studies linking lifetime physical exercise, obesity, and body mass index to breast cancer risk.

A 1999 study, done by a team including Carpenter and Bernstein, published in the British Journal of Cancer entitled, "Lifetime exercise activity and breast cancer risk among postmenopausal women," showed that strenuous exercise appears to reduce breast cancer risk among postmenopausal women who do not gain sizable amounts of weight during adulthood.

Overall, what have we learned about the role that exercise plays in breast cancer prevention? "The evidence is becoming more consistent about the risk-lowering benefits of exercise in postmenopausal women," Carpenter says. "However, exercise is still not listed as a protective risk factor in guidance provided to women by medically-related information sources," she adds. More evidence needs to be gathered first, she says, adding that with continued research in exercise and breast cancer, we could potentially factor in women's exercise patterns with other known risk factors for breast cancer, like those measured, for instance, in the Gail model.

To date, the Gail model is a checklist that takes into consideration a patient's age and the number of first-degree relatives who have been diagnosed with breast cancer. It also factors in whether a woman has had children and, if so, her age at her first delivery. It also counts the number and types of breast biopsies she has had and how old she was at her first menstrual period.

"I'd like to be able to see exercise listed as a way that women can lower their risk," Carpenter says.



Message from the Breast Cancer Research Council chair

Teresa L. Burgess, Ph.D.

WHEN I ACCEPTED THE HONOR OF chairing the California BCRC in June of last year, I saw an opportunity to further define and work to achieve our mission to reduce the impact of breast cancer in California. BCRP's primary role as a funding organization gives us the opportunity to guide research into areas that we identify as under resourced as well as in areas focusing on populations and issues unique to California. Our flexibility, research priorities, and innovative funding

mechanisms are helping us as we strive to have a positive impact on halting the breast cancer epidemic.

A major goal that I have set for the council and myself is to focus on dissemination of research findings relevant to breast cancer patients, survivors, practitioners, and all women of California. The regular



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Dr. Karyn Angell

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In her study, Dr. Angell interviewed 34 women recently diagnosed with primary breast cancer and asked them what else was going on in their lives in the year before diagnosis—and how soon they sought treatment.

She found that women who experienced severe life events such as the death of a parent or close family member during the year before breast cancer diagnosis were seven times more likely to delay treatment for breast cancer. What's more, women whose social network included people who were critical or demanding were found to be two and a half times more likely to delay treatment for their breast cancer.

When Dr. Angell applied for a grant in 1994, she had just received her Ph.D. in psychology from University of Oregon and was four months into an appointment at the lab of psychiatrist David Spiegel at Stanford University. Dr. Spiegel is a leading researcher on the effects of stress and social support on breast cancer survival, and he has studied how and why support groups benefit women with metastatic disease.

"My experience at Stanford taught me how important it was to interview women living with breast cancer and hear firsthand what they were experiencing, rather than giving them questionnaires to fill out to report on stress levels," Angell says.

"The BCRP grant, which was my first funded work in breast cancer research, enabled me to receive training on the use of interview-based stress measures from George Brown, Ph.D., one of the leaders in the field of stress assessment," she says. "Combined with David's clinical training and encouragement, it was a tremendous opportunity."

Each of the face-to-face interviews that she conducted with the women in her BCRP study took an average of three-and-a-half to four hours. "Surprisingly, the women actually preferred the interviews to the questionnaires," she says. "Despite their length, interviews better captured their stressful experience."

"My BCRP fellowship was instrumental in preparing me for my current position as an independent behavioral research scientist," she says. "Walter Price was such a terrific program officer. So far, I have found a way to talk about BCRP in every scientific talk I've given since my fellowship!"

Dr. Angell, herself a survivor of childhood leukemia, currently manages her own stress levels by practicing yoga and meditation every day. Other personal stress busters include "taking time to connect with my best woman friend every week, enjoying my children at every opportunity, and laughing with my husband at the end of every day."

These days, she works at the Oregon Research Institute, in Eugene, Oregon, where she continues to study the effects of stress on women living with breast cancer. In 1999, Dr. Angell received a grant from the National Cancer Institute to explore whether breast cancer patients who are initially diagnosed with more advanced stages of disease experience more stressful life events in the two years before they are diagnosed. She continues to collaborate with her colleagues at Stanford on a BCRP Community Research Collaboration (CRC) award, "Alternative Support for Rural and Isolated Women in an HMO."



Chair's Message

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publication of this newsletter and distribution of informative articles to other newsletters relevant to breast cancer are two ways we are getting the most up-to-date information out to our stakeholders. In addition, our biannual symposium is purposefully designed for research information to flow from BCRP funded researchers to our other stakeholders, which includes breast cancer

survivors and advocates. We strive to make this a two-way learning process so that our researchers gain insight from survivors and advocates to guide their research into new areas of investigation. For the first time this year, we have also included a session titled "BCRP Listens". It is our intention that this session will introduce a third layer of information flow, from YOU—

survivors, advocates, researchers, practitioners, and interested public—to the BCRP. We will use the knowledge we gain from you to guide definition of future funding priorities into new, promising areas of research, as well as use it as a barometer of our past performance. We work for all of you—and we are committed to be responsive to your needs and ideas.

Another major area of focus for the BCRC is to find new ways to promote translation of research findings of potential benefit to breast cancer patients into practice—our Symposium title “From Research to Action” aptly describes this goal. The council’s diverse composition is allowing us to investigate this challenging area from many sides of the issue. We are currently asking questions such as: What are the barriers to translation? Should industrial partners be

tapped to participate? If so, how? How can the BCRP facilitate moving beyond these barriers and aid in the rapid translation of relevant research findings into practice?

In closing, I want to invite you to join us as we work actively to reduce the impact of breast cancer in California. Visit our web site (<http://www.ucop.edu/srphome/bcrp/>) for more information about the BCRP, BCRP funded research, and links to other sites with relevant information. Give us your feedback and ideas, be a conduit for dissemination of information about breast cancer and the BCRP to your family, friends, local community, and research colleagues. It is my hope that through the synergy of our individual efforts, we will have the greatest impact on our goal to better diagnose, treat, cure, and eventually prevent breast cancer.



Meet the Breast Cancer Research Council

Katherine McKenzie, Ph.D.

IN ORDER FOR THE BCRP TO CARRY OUT ITS mission of funding innovative research, we must track the trends and opportunities for progress that arise in the breast cancer research community. To do this, the BCRP relies on an advisory body called the California Breast Cancer Research Council (BCRC). The BCRC makes funding recommendations and plots out future directions for the BCRP. The council has been working hard to make the California Breast Cancer Research Program the standard bearer for breast cancer funding agencies.

But who are the people who make up this council? The BCRC is made up of 16 individuals chosen to represent the people who are affected by breast cancer and the institutions that can contribute to the solution. The chair of the council for 2001-2002 is **Teresa Burgess, Ph.D.**, an industry representative from Amgen Corporation. Teresa has a background in basic and



Sandra Walsh

applied cell biology and drug development.

Sandra Walsh is our vice-chair. She is an advocate representative on the council and co-founder of Y-Me Davis, president of California Breast

Cancer Organizations (CABCO), and an active member of the National Breast Cancer Coalition (NBCC).

The advocate representatives on the council have been committed to improving breast cancer policy and treatment through activism, public outreach, and enhanced delivery of care. They represent women from throughout California.

Diana Chingos is a breast cancer survivor who heads a patient advisory council at the USC/Norris Cancer Center in Los Angeles, one of the few of its kind in the country. She is active with the NBCC and works for MAMM, a national consumer magazine for women affected by breast and reproductive cancers.



Diana Chingos

Akua Jitahadi

represents Black Women for Wellness,

an organization that she founded. Akua is concerned about health issues affecting Black women and coordinates “Keep in Touch ... Do BSE’s” for Black Women and Wellness.

Lauren John is representing Breast Cancer Action. She is a breast cancer survivor, a journalist, a DOD grant reviewer, and a member of

What is your opinion?

BCRC is interested in knowing what you think. Come to the “BCRP Listens” session in the “From Research to Action” breast cancer research symposium from 5 to 6 pm on March 8, 2002, at the Oakland Marriott and Convention Center. Tell where you think the breast cancer field is headed and what you think BCRP should be doing to steer it in the right direction.

advocacy groups throughout the U.S.

Florita Maiki is representing Breast Health Access for Women with Disabilities. Florita is dedicated to providing breast care and detection access for women with disabilities.

Industry representation gives the BCRP insight into how we can best work with commercial partners to move the breast cancer research field forward. The council's other industry representative, **I. Craig Henderson, M.D.**, of ALZA Corp. is also president of Access Oncology, Inc. as well as a clinician and professor of medicine at UCSF.



I. Craig Henderson, MD

The scientists/clinicians on the council are experts in basic science, imaging technology, epidemiology, behavioral science, and economic modeling research. **Hoda Anton-Culver, Ph.D.**, of the University of California, Irvine studies trends in breast cancer incidence and treatment. **A. Elaine Ashby, M.D.**, of Lawrence Livermore National Laboratory is an expert in ultrasound and biomechanics. **Susan J. Blalock, Ph.D., M.P.H.**, of University of the Pacific researches behavior, economics, and health care delivery. **Tammy Tengs, Sc.D.**, of University of California, Irvine investigates decision science, long-term public health, and economic consequences.



Anna M. Wu, PhD

Robert Carlson, M.D., of Stanford University is the medical specialist representative on the council. He is an expert in clinical care, clinical trials, and the development of computer-based models to assist physicians in health care delivery.



Lauren John

I. Craig Henderson, M.D., of ALZA Corp. is also president of Access Oncology, Inc. as well as a clinician and professor of medicine at UCSF.

The scientists/clinicians on the council are experts in basic science, imaging technology, epidemiology,

Our non-profit health organization representatives are **Irene Linayao-Putman** of the Union of Pan Asian Communities and **M. Ellen Mahoney, M.D., F.A.C.S.**, of the California Medical Association. Irene works to reduce cultural and linguistic barriers to health care access and to increase educational awareness among communities such as Hmong.



Robert Carlson, MD



Irene Linayao-Putman

Ellen is a clinician and a co-founder of Community Breast Health Project in Palo Alto and serves as a resource for other breast cancer organizations, such as the Breast Cancer Fund, Breast Cancer Action, the Susan Love web site, and community breast health projects.

Georjean Stoodt, M.D., M.P.H., is the ex-officio representative from the Department of Health Services and heads Breast Cancer Early Detection Program—a sister program to BCRP.

All of our council members bring their unique and varied experiences to bear on removing the obstacles to preventing and curing breast cancer. They provide the BCRP with well-informed opinions from different arenas of the breast cancer community.



M. Ellen Mahoney, MD, FACS

There is much more to learn about our council members. Visit the BCRP web site for the full biographies of our council members (<http://www.ucop.edu/srphome/bcrp/>).

If you are interested in serving on the council or wish to nominate someone else to serve, call, phone or email us.



56 California Breast Cancer Research Fund. Contributions will fund research toward preventing and curing breast cancer. Breast cancer is the most common cancer to strike women in California. It kills 4,000 California women each year. Contributions also fund research on prevention and better treatment, and keep doctors up-to-date on research progress. For more about the research your contributions support, please see our web site: www.ucop.edu/srphome/bcrp/. Your contribution can help make breast cancer a disease of the past.

California Resident Income Tax Return 2001

Form **540A**

Step 7 Contributions



- CA Seniors Special Fund
See page 23 ● 51 _____
- Alzheimer's Disease/Related
Disorders Fund ● 52 _____
- CA Fund for Senior Citizens ● 53 _____
- Rare and Endangered Species
Preservation Program ● 54 _____
- State Children's Trust Fund for the
Prevention of Child Abuse ● 55 _____

CA Breast Cancer Research Fund ● 56 _____

- CA Firefighters' Memorial Fund ● 57 _____
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Foundation Fund ● 59 _____
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BCRP News

We'd like to hear from you!

BCRP is interested in feedback from advocates, researchers, clinicians, and the general public. To this end we are placing a feedback page on our web site (<http://www.ucop.edu/srphome/bcrp>) that will allow interested individuals to communicate with the Program. We will post your comments on the web site under the title, "What Others are Saying" and pass on your comments to our advisory council. Please use this opportunity to comment on all aspects of the BCRP, including the types of research we should be supporting, our procedures for awarding grants, and the format/structure of the BCRP web site. Those submitting information will have the option of remaining anonymous.

BCRP launches fundraising campaign

BCRP has launched its first fundraising and marketing campaign. The program will be implemented over the next two years. Objectives include establishing an ongoing base of funding,

generating awareness of the BCRP, and initiating partnerships with organizations and companies that will help take our message to the public. Laura Talmus Associates and The Pacific Group, both of San Francisco, will work closely with our Council and Outreach Committee to implement the program.

Coming soon to BCRP

A "BCRP in the News" page will be added soon to our web site. It will highlight the accomplishments of our funded researchers, especially when the research has received media interest, such as institutional press releases or newspaper articles.

Watch for the Breast Cancer Research Symposium in 2003

BCRP will sponsor a breast cancer research symposium in Southern California in September. Watch our web site for the date and location.



Recent BCRP Publications*

(These and all other publications are available on the BCRP WWW Home Page)

Call for Applications, Cycle VIII

Application Packet for Cycle VIII

Cycle VII 2001 Awards

2001 Grant Administration Manual

"From Research to Action" Breast Cancer Research Symposium Program

2001 Advances in Breast Cancer Research

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Breast Cancer Research Council

Chair, Teresa Burgess, Ph.D., *private industry representative*

Vice Chair, Sandy Walsh, *advocate*

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Robert W. Carlson, M.D., *medical specialist*

Diana Chingos, *advocate*

Jacquelyn Duerr, M.P.H., *DHS alternate member ex officio*

Akua Jitahadi, *advocate*

Lauren John, *advocate*

Irene Linayao-Putman, *non-profit health organization representative*

M. Ellen Mahoney, M.D., F.A.C.S., *non-profit health organization representative*

Florita Maiki, *advocate*

I. Craig Henderson, M.D., *private industry representative*

Georjean Stoodt, M.D., M.P.H., *DHS member ex officio*

Tammy Tengs, Sc.D., *scientist/clinician*

Anna M. Wu, Ph.D., *scientist/clinician*

What is the Breast Cancer Research Program?

IN 1993, CALIFORNIA BREAST CANCER ACTIVISTS JOINED FORCES WITH scientists, clinicians, state legislators, and University of California Officials to catapult the state into national leadership for breast cancer research. The activists, most of them women who had survived or currently had breast cancer, were impatient with the slow pace of progress against the disease. With their allies, they wrote and won passage of statewide legislation to push breast cancer research in new, creative directions. The California Breast Cancer Act, introduced by then-Assemblywoman Barbara Friedman, increased the tobacco tax by two cents a pack, with 45% of the proceeds going to what was then, and still is, the largest state-funded breast cancer research effort in the nation, the California Breast Cancer Research Program (BCRP). Funded primarily by the tobacco tax and supplemented with taxpayer donations designated on state income tax returns and private contributions, BCRP has provided nearly \$120 million in research funds since 1995. In 2001, the BCRP awarded over \$18 million for 66 single- and multiple-year grants at 28 California institutions.

The BCRP is under the direction of the University of California, Office of the President in Oakland. Our 16-member Breast Cancer Research Council includes scientists, clinicians, representatives of industry and non-profit health organizations, and five breast cancer advocates. The council provides vision, sets research priorities, and recommends how we invest our funds in research.

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