UNC Lineberger Comprehensive Cancer Center

cancer lines

University of North Carolina School of Medicine & UNC Hospitals

Spring 1999

UNC LINEBERGER COMPREHENSIVE CANCER CENTER

the inside line

North Carolina: The State of Discovery in Breast Cancer

Breast cancer is the second leading cause of cancer death for all women, and the leading cause of cancer death in women between the ages of 40 and 55. This year, a breast cancer will be newly diagnosed every three minutes, and a woman will die from breast cancer every 12 minutes. It's also a small threat to men — almost 1,600 will develop the disease this year.

With compelling statistics like this, it's no wonder that researchers, clinicians and public health specialists at UNC and the Lineberger Center are working diligently to find new ways of detecting, treating and preventing this disease. Their work begins with the National Cancer Institute-funded **Specialized Program of Research Excellence** (SPORE) in Breast Cancer, one of six in the country.

"The purpose of this SPORE is the integration of public health, clinical and molecular sciences to better investigate etiology, prevention and early detection in breast cancer and to devise ways to reduce breast cancer mortality," explains Shelton Earp, Lineberger's director and the SPORE's principal investigator.

The SPORE has four components:

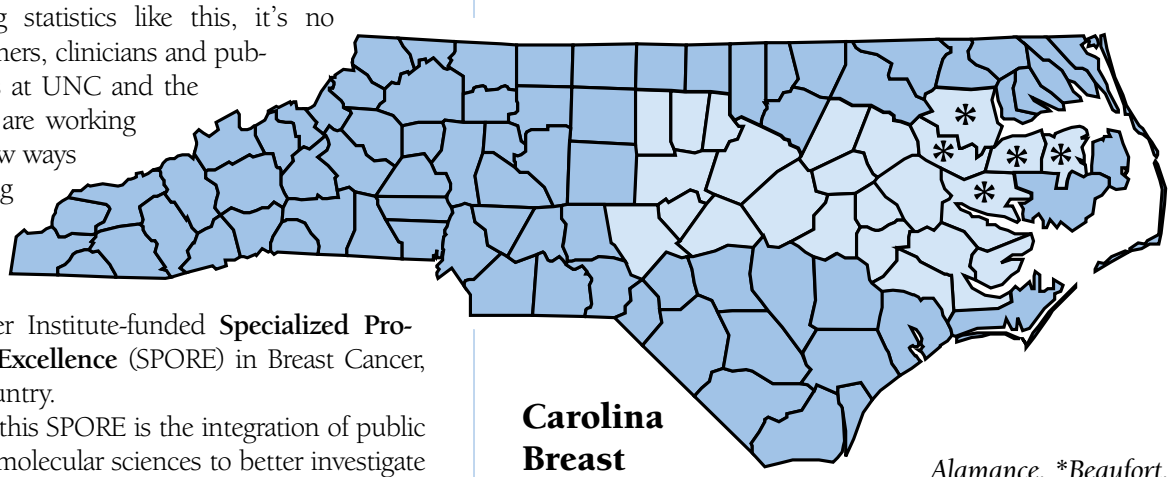
- ***Public Health Intervention:*** strives to increase the use of mammography in underserved African-American populations
- ***Molecular Epidemiology:*** seeks to identify the environmental and genetic causes of breast cancer
- ***Gene Discovery:*** identifies new molecular markers of breast cancer that can be used for early diagnosis and treatment
- ***Clinical/Developmental:*** Projects that produce innovative ideas for novel therapies or diagnostics.

"I think the two most important features of the UNC SPORE are depth and flexibility," notes Bob Millikan, assistant professor of epidemiology, and an investigator in two SPORE projects. "Depth because we address breast cancer at many levels — social, behavioral, genetic, environmental — and flexibility because we have been responsive to the needs of the North Carolina community in the design and implementation of our studies."

Here's an overview of some projects within the SPORE:

The North Carolina Breast Cancer Screening Program

Breast cancer can be successfully treated with greater than a 90 percent cure rate if it is detected early. But early detection through regular screening mammography is critical, and the message hasn't been as effectively delivered to some women as to others. Less than half of women ages 50 and older in the United States have regular screening mammograms — and the number is even lower in the African-American community. In all women, breast cancer incidence increases with age, rising rapidly after age 40. Almost 80 percent of all breast cancers occur in women over 50 years of age.



Carolina Breast Cancer Study Counties & North Carolina Breast Cancer Screening Program Counties*

*Alamance, *Beaufort, *Bertie, Chatham, Craven, Durham, Edgecombe, Greene, Harnett, Johnston, Jones, Lee, Lenoir, *Martin, Moore, Nash, Orange, Pamlico, Pitt, *Tyrrell, Wake, *Washington, Wayne and Wilson.

The NC-BCSP is a long-term, comprehensive, multilevel community intervention program designed to increase breast cancer screening among older African-American women in five rural eastern North Carolina counties. Its primary objectives are to:

- *Increase initial and repeat mammography screening by black women ages 50 years and older*
- *Increase follow-up of positive screening mammograms*
- *Establish partnerships between health care providers and communities that will maintain increased breast cancer screening and follow-up once the grant ends.*

These objectives are being pursued through three complementary intervention components: OutReach, InReach and Access. OutReach efforts emphasize providing social support to women within their social networks through 160 "natural helpers" trained as lay health advisors (LHAs); the InReach and Access components are directed at lowering organizational and structural barriers to breast cancer screening. InReach focuses on health care providers and organizations, while Access addresses factors such as cost, referral systems, and transportation.

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Director's Message

Dr. H. Shelton Earp, III

The cover story of this issue of *Cancer Lines* is UNC Lineberger's Specialized Program of Research Excellence (SPORE) in breast cancer. This grant is our oldest and best example of comprehensive, multidisciplinary research. With breast cancer, as with all cancers, work needs to be done on many different levels. Therefore SPORE research starts at the level of the gene, extends to mouse models of breast cancer right on through to the patient, the clinic, the community and the population.

For example, we have digital mammography, a new and possibly better method of imaging the breast, but we also have to persuade people to use it. Clinical science needs behavioral science to achieve maximum success. Our most fundamental scientists, those who study the shape of molecules, helped design the breast cancer vaccine that is just beginning clinical trial at UNC. Scientific discoveries are critical, but they must be translated into clinical use.

UNC's SPORE program combines all these multidisciplinary elements. Basic laboratory research into breast cancer genes, including BRCA1; clinical trials of a new vaccine, new ways to treat advanced breast cancer, and the NCI-sponsored STAR trial comparing tamoxifen and raloxifene as possible preventive agents against breast cancer; study of digital mammography to determine if it detects more breast cancers than traditional film x-rays; molecular epidemiologic work to discover environmental elements that may be involved in the development of breast cancer; and outreach programs to increase the number of older African-American women in rural areas who get mammograms.

A key element to our SPORE's success is the participation of our Center members from UNC's nationally recognized School of Public Health. The faculty have developed population-based studies that extend the reach of cancer programs into the community. The Carolina Breast Cancer Study, when completed, will involve 4000 women and 26 hospitals in 24 central and eastern NC counties. The North Carolina Breast Cancer Screening Program trains lay health advisors across five counties to talk to their family and friends about the importance of mammography. This type of large-scale community intervention is tough to launch and even tougher to evaluate. But evaluate we must, if we are to tell the world that our community methods really work. The Schools of Medicine and Public Health are great partners in our successful SPORE team.

But the SPORE is not the only successful multidisciplinary team at UNC. Last issue featured a story on the Multidisciplinary Thoracic Oncology Group and their LIFE bronchoscope. This device can detect premalignant lesions not seen with ordinary methods. It is being used in conjunction with molecular epidemiologists from UNC and NIEHS to understand how normal cells transform to cancer cells. This will set the stage for investigation of methods of cancer prevention in patients at high risk of developing lung cancer.

Our new melanoma team offers the latest technology to screen for and treat this cancer. An inexpensive baseline examination with a digital camera will help physicians monitor later changes on the computer screen. Again a vaccine strategy, this time for advanced melanoma, is being tested at UNC. Team members have plans to move their program out to the community. We'll be profiling this program in an upcoming *Cancer Lines*.

UNC Lineberger is dedicated to providing you with the best possible care. Teams are working on all fronts to find how cancer starts, how to improve treatments and better ways to prevent it. Partnerships across the Health Affairs Schools including Dentistry, Nursing and Pharmacy and into the Research Triangle are what make the Lineberger such an exciting place. With your continued support, we will progress.

UNC LINEBERGER COMPREHENSIVE CANCER CENTER

UNC Lineberger is designated a comprehensive cancer center by the National Cancer Institute.

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Dr. H. Shelton Earp, III, Director
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The State of Discovery

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North Carolina Breast Cancer Screening Program Seeks to Increase Mammography Use

Community outreach specialists, employees of county health departments and community health centers, recruit and train lay health advisors and work with health department personnel and other health care providers to increase access to breast cancer screening. In this photo, community outreach specialist Eva Hill (*right*) is shown giving support to a woman who has just had a mammogram.

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The LHAs are one of the initiative's most innovative elements. "Our outcome evaluation suggests that our LHA intervention — probably supplemented with our Access and InReach interventions — made a difference in the number of older African-American women who actually got mammograms in the past two years," reports principal investigator Jo Anne Earp, professor and chair of the department of health behavior and health education. The initiative was most successful with poor women in households with family income under $12,000; this group is generally the most difficult to reach.

Moving forward, NC-BCSP is developing a brochure on abnormal mammogram results for use by LHAs, recruiting more primary care physicians for practice-based research, organizing support for those undergoing treatment and the first breast cancer survivors group for African-Americans in eastern North Carolina, and continuing to analyze the program's effectiveness and cost-effectiveness.

The Carolina Breast Cancer Study (CBCS) and The Carcinoma-in-situ (CIS) Study

These two projects are population-based case-control studies aimed at discovering new risk factors for breast cancer. Both invasive and in-situ (or non-invasive) breast cancer are identified among women in 24 counties of North Carolina. The two studies are run in parallel and enroll equal numbers of African-American and white women, and include women of other racial/ethnic groups as well.

The two studies seek to identify environmental and behavioral risk factors (using information collected from in-depth interviews) as well as genetic factors which influence breast cancer development. "Our study is one of the first to treat breast cancer not as a single entity, but to consider subtypes defined on the basis of genetic changes that are acquired in breast tissue as tumors develop," says Bob Millikan, principal investigator of the Carolina Breast Cancer Study. "The particular patterns of mutations may help to uncover causes of breast cancer."

Two types of genetic markers are examined in the CBCS and CIS studies: inherited genetic alterations and acquired genetic alterations found only in breast tumors. Due to the complexity of and ethical issues surrounding genetic markers, the studies have involved advocates at several stages of the planning and implementation.

"We convened an advisory board of breast cancer advocates, many of whom have served on national advisory panels, to educate us about the personal side of genetic testing: the issues women face, the ramifications for their families, and the problems with insurance and confidentiality. We used their ideas as the basis for a detailed policy regarding genetic testing in our studies."

Gene Discovery and Molecular Basis of Breast Cancer

To fully understand breast cancer, researchers must look at it on the genetic and molecular levels. "We're trying to find new genes involved in

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"Making A Real Difference."

"During my recovery from cancer, I found out how therapeutic it was to talk to other cancer survivors. I now realize that education and advocacy are just two of the ways survivors can fight back. The NC-BCSP provides the opportunity for me to organize support groups and provide them with useful, authoritative information that will help all survivors gain back a sense of balance and control in their lives."

Bernice McElrath *(right)*, breast cancer survivor and leader, breast cancer support group, NC-BCSP, shown here with support group member and survivor Nancy Barnhill. *(pictured left top)*

"As a survivor, I am excited to be involved with the Carolina Breast Cancer Study. We must find out why so many of our women are being diagnosed with this disease. Hopefully, this study will give us answers we desperately need to point us in the direction of a cure."

Julie R. McQueen, director of education, Poe Center for Health Education; Co-chair, 1999 Komen NC Triangle Race for the Cure. *(pictured left)*

Drs. Kathy Conway-Dorsey and Bob Millikan discuss the consequences of p53 mutations.

Profile

It's Simple: Eat Well and Be Active!

When talk turns to the "study of the week"— the latest hot-shot preventive for cancer or other dread diseases—Marci Campbell rolls her eyes. "The media keep pushing the latest findings of various epidemiological studies that actually don't prove causation or lack of causation," she says. "But all these conflicting media stories do cause more confusion and skepticism among the public about what to eat."

For instance, there's been a lot of talk in the media about supplements. Although vitamins and compounds such as beta carotene are important, Campbell, a nutritionist at UNC-CH's School of Public Health, says, "Supplements do not have the same beneficial effect as fruits and vegetables. And, in the case of beta carotene, some scientific findings indicate that supplemental doses actually increased cancer risk," she asserts. Her advice: eat more fruits and vegetables and avoid eating a lot of high-fat foods.

People looking for a magic bullet preventive are tilting at windmills. "It may not be possible to look at one aspect of health and say that's the one thing to do," Campbell says. "Nutrition and exercise work together to create better overall health that reduces the risk of cancer, cardiovascular disease and other diseases."

Basic & Social Sciences. Campbell's work centers on helping people improve their health and maximize their natural resistance to disease. "My research interest has to do with developing and evaluating interventions that are based on theories of behavior change, and testing them in populations at risk for cancer."

To do that, Campbell blends a strong grounding in biological science with a healthy dose of social science theory. As a botany major at Duke University, Campbell grew an interest in nutrition. Later, she earned a Master of Public Health degree at UNC in 1977 and went on to earn her PhD from UNC in Health Behavior and Health Education in 1992.

The combination of skills allows Campbell to devise effective interventions based on solid social science theory with credible evaluations that establish scientific merit. "Having a strong biological science background has given me an appreciation for rigorous research and designing studies carefully and thoughtfully so they stand up to scientific scrutiny," she says.

Improved Nutrition. Currently, she is using these strategies in two projects primarily based out of the Lineberger Cancer Center. The WATCH (Wellness for African-Americans Through Churches) Project, funded by the American Cancer Society, and PRAISE (Partnership to Reach African-Americans to Increase Smart Eating) program, funded by the National Cancer Institute, center on eastern North Carolina, a target area for other health promotion projects as well. The region was chosen because, she says, "We've wanted to get out in rural communities where there is a higher minority population and the cancer rates are above average."

WATCH and PRAISE both work through churches. "PRAISE is focusing on increasing fruit, vegetable, and fiber intake, and decreasing fat intake. We try to reduce total fats, but there are

some good fats, such as mono-unsaturated fats like olive oil. The WATCH project focuses on nutrition, but also stresses physical activity and screening for colorectal cancer."

Another of Campbell's projects, Black Churches United for Better Health, was funded by the National Cancer Institute and was also based in rural eastern North Carolina. Fifty churches participated with a goal to see if a community-based intervention could help participants to improve overall health and decrease the risk of certain types of cancer. The main message of the project was to encourage consumption of five servings of fruits and vegetables each day, since they are foods that are full of cancer-preventing anti-oxidants such as vitamin C, folic acid and beta carotene.

Education. "There's a lot of conflicting and contradictory advice coming out in the media and it's a huge problem for health educators," Campbell adds. "We really don't know absolutely that a healthy diet and activity will prevent cancer, but evidence is mounting that eating well and being active can have many health benefits including psychological ones. So get out there and enjoy!"

Briefs

Scientists Evaluate New Mammography Technology

Clearer mammograms could help doctors detect breast cancer earlier and offer better care to their patients. In November, UNC radiologists began using the first digital mammography machine in North Carolina, one of only eight such machines in the world.

"We hope that digital mammography will increase detection of breast cancers since lumps that aren't visible with conventional technology may be seen more clearly with this enhanced method," says Etta Pisano, associate professor of radiology, chief of breast imaging and LCCC co-leader of the breast cancer program.

"Using this machine, we can manipulate mammographic images to improve quality so critical clinical information may be revealed more easily," she adds. UNC is doing a clinical trial to study the value of the new technology. "We need to prove its benefits in women known to need breast biopsy before we test it on asymptomatic women."

The technology is being developed and tested by a group of 21 institutions and four corporations in the United States, Canada and Europe called the International Digital Mammography Development Group.

Involved in the study are scientists from the universities of Toronto, Chicago and Virginia; Massachusetts General Hospital; General Electric in Schenectady, NY; Fischer Imaging Corp. in Boulder, CO; Trex Medical Imaging in Stamford, CN; and Eastman Kodak Corp. in Rochester, NY.

Also involved are clinicians from Brooke Army Medical Center in San Antonio; the U.S. Army Medical Research Facility in Washington, DC; Good Samaritan Medical Center in West Islip, NY; Thomas Jefferson University Hospital in Philadelphia; Massachusetts General Hospital; and the universities of Massachusetts, Colorado, Toronto, California-San Francisco and Pennsylvania.

Advising the project are specialists from the universities of California-Davis, Nijmegan, Netherlands, Brown, Duke and Pennsylvania; the National Alliance of Breast Cancer Organizations; and the American Cancer Society.

New study shows steps leading to colon cancer

New research done on insects in North Carolina and on human cells elsewhere has identified a key signaling mechanism required for normal embryonic development. When inappropriately activated, studies show, the mechanism turns healthy cells first into abnormal ones and then often into tumors.

"Our work, together with that of our colleagues, reveals for the first time the precise role of a key regulatory protein found in both insects and ourselves," explains Mark Peifer, assistant professor of biology and LCCC member. "We have found that this protein, called 'armadillo' in insects and 'beta-catenin' in humans, goes into the cell nucleus and helps regulate gene expression or, in other words, turns genes on and off."

In normal embryonic development, by switching genes on and off, the protein tells cells which tissues they should make and directs, for example, development of arms and legs. The process occasionally goes awry, however, when beta-catenin becomes active in places where it should not. It

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signaling molecules or proteins that tell cells to proliferate, invade or metastasize," explains Bill Cance, professor of surgery and one of the project's principal investigators. His work centers on the focal adhesion kinase (FAK). "My laboratory was the first to identify FAK in human tumors and link it to cell death or apoptosis. We're now trying to develop it as a target for molecular therapeutics so we can effectively program a cancer cell to kill itself," said Cance, the Center's associate director of clinical care.

Channing Der, professor of pharmacology, and Cance are collaborating on a project to develop a novel method to detect mutant genes important in breast cancer causation and progression. "Intraductal breast cancers have a lot of mutations in their genes — even at the early stage," Cance says. "Our lab is making a pool of genes from breast cancers and then inserting them one at a time (by using a strategy involving viruses) into normal breast cells. In that way we can screen thousands of genes to see if they cause cancer," explained Der.

Another gene-based research project focuses on BRCA1 and is led by Tony Leadon, professor of radiation oncology, and Beverly Koller, assistant professor of medicine. "If we can understand the function of BRCA1 (the first breast cancer gene discovered), we may be able to understand why women who carry this gene get breast and ovarian cancers. That in turn will help us develop a prevention strategy," he explains. Leadon and Koller have made an exciting discovery linking defects in BRCA1 to defects in certain processes that repair DNA; this defect, which targets DNA repair to active genes, can compound errors, leading to a wider circle of mutant genes. Their finding, like many others of Lineberger researchers, was published in one of the top biomedical journals in the world — in this case, *Science*.

The faculty and staff of the SPORE projects have branched out into many aspects of the University and indeed the State, says Shelley Earp. "Since the SPORE was first funded in 1992, the Center has become one of the best places in the country for integrated breast cancer research; national funding for breast cancer projects has increased eightfold — just one mark of the esteem the nation has for our faculty.

"The opportunities and new ideas that emerge from our SPORE, mixing behavioral, epidemiologic, molecular and clinical scientists both astound and delight me — this intellectual melting pot will make a difference."

by Margot Carmichael Lester

(Left to right) *A breast cancer patient discussing treatment options with Drs. Carolyn Sartor (seated), Lisa Carey and Mark Graham. Patients at the UNC Breast Center benefit from the expertise of the team of experts, some of whom are SPORE researchers. SPORE scientists work to move laboratory findings to the clinic as rapidly as possible. In this case, they are discussing a new trial using chemotherapy before surgery to reduce the size of the tumor, thus decreasing the need for extensive surgery and sparing more breast tissue. The cancer tissue obtained before and after chemotherapy is being studied in LCCC for ways to predict response to chemotherapy so that future patients may receive drugs likely to shrink their particular tumor.*

then triggers cells to reproduce indefinitely, or it prevents them from dying, leading to benign tumors that can later become malignant.

"It is now clear that this sort of mistake underlies essentially all cases of colon cancer and many melanomas, a form of skin cancer difficult to treat," he adds.

A report on the findings appeared in the March 21 issue of the journal *Cell*. Besides Peifer, UNC-CH authors are doctoral students Robert Cavallo and Joseph Loureiro. Other authors include Marc van de Wetering and Hans Clevers of University Hospital in Utrecht, Netherlands, and others at the National Cancer Institute and American and Northwestern universities.

Paradoxical gene suppresses tumors, yet makes them grow

UNC scientists have found that a gene discovered earlier in the decade has paradoxical properties — it helps bring about tumor cell death, yet also is necessary for their growth.

The new study highlights an important molecular mechanism in the evolution of tumors and could lead to new anti-cancer drugs targeted to a specific gene. A report published in the Sept. 24, 1998, issue of *Molecular Cell* focuses on the gene E2F1, a cell-cycle regulating molecule first identified in 1992. On the molecular chain of events leading to tumor formation and growth, E2F1 exerts its action "upstream" of the tumor suppressor gene known to researchers as p53.

Study senior author Dr. Terry Van Dyke, professor of biochemistry and biophysics and LCCC member, says E2F1 apparently prompts p53 to initiate a natural defense against developing tumors: apoptosis — programmed cell death. The study examined mice genetically engineered in Van Dyke's laboratory to develop a type of cancerous brain tumor that occurs rarely in people. Some of these "transgenic" mice were selectively bred not to have E2F1.

"We found that cell death was diminished by 80 percent in the tumors of animals without E2F1," Van Dyke said. The researcher and her colleagues also discovered that without E2F1, the growth of brain tumors slowed considerably, even though the rate of tumor cell death had dropped sharply.

"This was surprising. Although p53 cell death drops because E2F1 is not there to induce it, tumor growth does not accelerate," Van Dyke said. "And the reason the growth rate is not accelerated, we discovered, is that E2F1 is required also for proliferation of the tumor cells."

Thus E2F1 is a kind of molecular paradox. It helps suppress tumors, yet its presence is also needed for tumor growth. Moreover, unlike p53, which is absent in about half of cancers, E2F1 is not deleted from cells, normal or cancerous.

As a result, Van Dyke said, E2F1 may be "an appropriate target" for drug therapy specifically aimed at inhibiting tumor growth by shutting down the gene. "E2F1, at least in the mouse, is dispensable for all normal cell cycles. The mouse is fine without it," she said. "E2F1-deficient mice develop normally and live long lives."

The study authors say it will be important to determine if E2F1 is required for tumor cell proliferation in diverse tumor types. Van Dyke said her laboratory is extending studies to other tumors, including glioma, a more common brain tumor. Her laboratory already has created a transgenic animal model for lymphoma. In development are animal models for cancers of the breast and prostate and for glioblastoma.

Along with Dr. Van Dyke, UNC-CH co-authors of the report are Dr. Huichin Pan and Dr. Chaoying Yin. Other collaborators include Drs. Nicholas J. Dyson, Ed Harlow and Lili Yamasaki of Massachusetts General Hospital Cancer Center in Charlestown, Mass.

Lineberger

Lineberger Director Dr. Shelley Earp (left) *and Dr. Joseph Pagano* (right)*, Director Emeritus, present the Lineberger Distinguished Achievement Award to Dr. Stuart Bondurant* (center)*, Dean Emeritus of the UNC-CH School of Medicine, in recognition of his nearly 20 years of extraordinary service as Dean. His steadfast support and his initiatives in cancer research, education and clinical care helped build the Cancer Center and its programs.*

(Left to right) *Mary Rice, Jeanne Paine and Joanne Thiele, all of Southern Pines, surround Dr. Wesley Fowler, chief of gynecologic oncology at UNC, after hosting a successful luncheon at which they raised close to $30,000 for women's reproductive tract cancer research.*

Ribbon Cutting for Look Good... Feel Better Van Held at UNC Lineberger

(Left to right) Jim Murray, Treasurer, Southeast Division of the American Cancer Society; Carol Bailey, President of the North Carolina Chapter of the National Cosmetology Association; and Dr. Bill Cance, Associate Director for Clinical Care, UNC Lineberger, watch as Carolyn Deaver, Vice President, Cosmetic, Toiletry and Fragrance Association Foundation and Director of the Look Good…Feel Better program, cuts the ribbon to open the touring van. UNC Lineberger was the launch site for the Look Good…Feel Better van that will visit cancer centers across the country in the next year to promote the Look Good…Feel Better program for cancer patients. The program helps patients cope with appearance-related side effects by providing skin and haircare tips and free make-up for them to use after they complete the session. The impact can be clearly seen as patients leave the session looking good and feeling better about themselves. Look Good…Feel Better partners are the Cosmetic, Toiletry and Fragrance Association, the American Cancer Society and the National Cosmetology Association.

Founding and current corporate sponsors Governors' Club (a residential golf community located near Chapel Hill), (left to right)*, Governors' Club Development Corporation Chairman and President Kirk Bradley with guests Deanne Peck, Donna Gregory-Hoerdemann and husband Greg at the 1999 Lineberger Club brunch and basketball game.*

The Lineberger Club brunch featured an auction of a basketball signed by the UNC basketball team. Top bidder Dr. Robert Sevier and son Robert "Skip" Sevier, Jr. hold their prize.

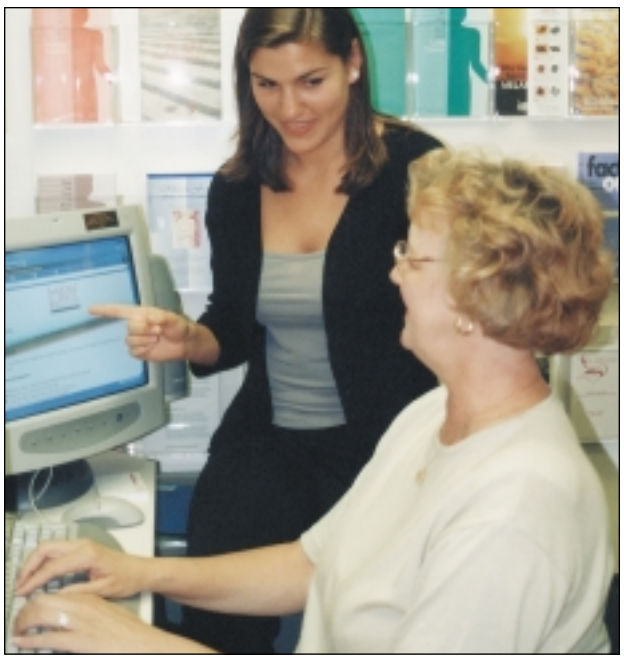
Scrapbook

Lineberger scientists (left to right) *Tony Leadon, Bill Kaufmann, Lisa Carey, Center director Shelley Earp and Bob Millikan discuss the multifaceted analysis of the effects of genetics on breast cancer outcome. Their work in the genetics of breast cancer is supported by the Breast Cancer Research Foundation. UNC Lineberger was honored for a third time with a grant for its clinical program in breast cancer research. The Center is one of 17 grantees across the country.*

The 1998 Lineberger Fellows were honored at a Board of Visitors' dinner. Fellows receive a $3,000 supplementary stipend to recognize the excellence of their research activities. The awards were begun in 1987 to encourage promising new cancer researchers. This year's fellowships were made possible by Best Distributing Company in Goldsboro, NC and the Cancer Research Foundation of America in Alexandria, VA. (Left to right) *UNC Lineberger Center member Dr. Robert S. Johnson; Lineberger Fellow Mr. Ian J. Caley; UNC LCCC member Dr. Bob Millikan; Lineberger Fellow Eric Duell; Lineberger Fellow Julie Y. Reuther (not pictured is her mentor Dr. Albert Baldwin); LCCC member Dr. Terry Van Dyke; Lineberger Fellow Mai-Jing Liao.*

Chapel Hill Businesses and Shoppers "Roundup for a Cure"

95 downtown business association members participated in the first-time event held on Saturday, March 27. Shoppers were offered the chance to "roundup" their purchase total for cancer research; i.e. from $15.20 to $16.00 or even $20.00. Some businesses matched the contributions from shoppers. *Pictured left (left to right)*: Chris Rice, owner, Carolina Brewery; Missy Julian-Fox, owner, Julian's and Julians' Home; Kathleen Lord, owner, Emma's, and chair, Downtown Commission; Carol Richards, Director of Promotions, The Chapel Hill News; "Robby Roundup" Robert Humphreys, Executive Director, Chapel Hill Downtown Commission. Pictured right: Peacock's Nest employees, one of the businesses that matched contributions, welcomed UNC Lineberger Center Associate Director Dr. Bill Cance, his daughter Alyssa and his mother, Mrs. Betty Cance.



Tri Delta Sorority members at UNC donated a new computer and printer to the Patient/ Family Resource Center. The new computer gives patients, family members and others improved access to the latest cancer information, and the printer enables them to copy the information to share. (Left to right) *Tri Delta Philanthropy Chair Lauren Block points out a website to Patty Yeager, the wife of Dr. David Yeager who is being treated at UNC for head and neck cancer. The Yeagers came to UNC from Ft. Seybert, West Virginia.*

(Left to right) *Dr. Shelley Earp presents a plaque to the 1999 Recipient of the Lineberger Center's Outstanding Service Award: Board of Visitors member Larry Tomlinson of Charlotte. He was recognized for his selfless and dedicated service to the Center. Over the years, he has served as Chair of the Board, Vice Chair for Development, Chair of the Charlotte area campaign for the building expansion and President of the Lineberger Club.*

Clinical Trials Underway

For information about the following trials or other UNC LCCC trials, call the UNC Protocol Office at 919-966-4432, or visit the cancer center's website at http://cancer.med.unc.edu

Multiple Myeloma/Waldenstrom's Disease (LCCC 9721). This study is intended for patients with advanced multiple myeloma or Waldenstrom's Disease and includes the use of high doses of two chemotherapy drugs, mitoxantrone and melphalan, followed by autologous stem cell transplantation. These drugs are known to be effective for this disease and have been used in many other transplant treatments. This treatment is administered in two parts, with the first drug, mitoxantrone, being administered over two days in the hospital. Patients are then discharged and readmitted three days later for the melphalan treatment and stem cell infusion. This entire treatment requires about two and one-half weeks in the hospital for blood counts to recover after which patients are ready to be discharged. About six patients have been treated with this program so far, and they have all recovered their blood counts and are doing well after their transplants.

Breast Cancer (LCCC 9818) This study is intended for patients who are newly diagnosed with stage II, III or metastatic breast cancer and whose breast cancer contains the her-2neu protein and who have not had previous chemotherapy. The treatment includes a combination of surgery, chest wall irradiation, and three chemotherapy drugs, adriamycin, cyclophosphamide, and taxol, along with and then followed by the new antibody treatment, herceptin. This exciting treatment protocol uses many of the latest treatments that have been shown to be most effective in this group of women. The initial treatment including chemotherapy, surgery, and irradiation will last approximately 8 months with plans for an additional 7 months of herceptin treatment following this initial therapy. Approximately 150 women will be enrolled in this study over the next three years.

(LCCC 9819). The purpose of this study is to identify molecular markers in breast cancer tissue that will allow physicians to predict which patients will respond best to which chemotherapy treatment. This study requires that a sample of breast cancer tissue be obtained before, during, and after chemotherapy is completed so that they might be compared with one another. It is thought that certain changes in these tumor characteristics will predict how well the chemotherapy and radiation treatments that patients receive will work so that in the future, chemotherapy may be targeted to those patients who are likely to benefit from it the most. The study will be open to women with newly diagnosed stage II, III or metastatic breast cancer who have not had previous chemotherapy. Many of these patients will also be receiving treatment on the Lineberger sponsored study described above (LCCC 9818), but this is not required for entry into the trial.

Melanoma. The purpose of this study is to test a vaccine for melanoma. The trial, sponsored by the National Cancer Institute, will test a melanoma (Cancervax©) vaccine in patients whose tumors have spread to the lymph nodes or vital organs. This large-scale study is being conducted at many centers as the final step towards FDA approval of the drug. The melanoma vaccine is designed to stimulate the patient's own immune system, spurring on the production of antibodies and killer T cells directed toward the melanoma. Patients taking part in this Phase Three trial will receive either the vaccine or placebo. Patients must be tumor free to be eligible for the trial.

calendar of events

JUNE

5th Race for the Cure. North Carolina Triangle-area 5K race sponsored by the Susan G. Komen Foundation. Meredith College Campus, Raleigh, NC.

SEPTEMBER

18th Cancer Patient Symposium – *The Wellness Approach to Cancer Care*. Keynote Speaker: Dr. Jeffrey White, Director, Office of Cancer Complementary and Alternative Medicine, National Cancer Institute. The Friday Center, Chapel Hill, NC.

24th Board of Visitors Meeting. Lineberger Cancer Center, Chapel Hill, NC.

OCTOBER

9th Body & Soul Breast Cancer Symposium. The Friday Center, Chapel Hill, NC

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