



CANCER LINES

UNC LINEBERGER COMPREHENSIVE CANCER CENTER • SPRING 1997

UNC SCHOOL OF MEDICINE • UNC HOSPITALS

Pagano Receives State's Highest Honor

by Margot Carmichael Lester

Joseph S. Pagano, director of the UNC Lineberger Comprehensive Cancer Center and Lineberger Professor of Cancer Research, was honored last December with the 1996 North Carolina Award for Science. It is the highest civilian honor the state can bestow. North Carolina is one of only a handful of states to have a citizen awards program.

"Dr. Pagano has earned international recognition for his ground-breaking research and I'm proud he has received the North Carolina Award," said Governor James B. Hunt, Jr. "His dedication has helped cancer patients and AIDS patients live longer, and our state is very lucky to have him."

Pagano's research has focused on the Epstein-Barr virus (EBV), a human herpesvirus that causes mononucleosis and has been linked to several types of cancer. He was recognized for his landmark development of new ways to detect viruses in cells by looking for viral DNA. Through his research, Pagano discovered that the DNA of EBV was present in both an African cancer called Burkitt's lymphoma and in nasopharyngeal carcinoma, a cancer common in southern China. This discovery showed that EBV could cause cancer in two very different types of cells.



Dr. Joseph Pagano, Center director, receives the North Carolina Award from Governor James B. Hunt

He then found that EBV remained in the host cell as a minichromosome in these cancers. This viral fragment, an episome, partners with the host cell's DNA and is replicated when the cell divides, allowing EBV to persist indefinitely in the body after infection. Other herpesviruses may use similar strategems.

research with HIV and antiviral drugs laid the groundwork for the creation of the AIDS Center at UNC. It also prompted the FDA to seek his advice on the first HIV vaccine based on gene transfer. Elion credits him with developing one of the strongest cancer center programs in the nation with training, research and outreach components.

"Discovering how viruses replicate and persist is part of Dr. Pagano's long-term goal of learning how to control viral infection," Gov. Hunt said in his citation.

Pagano also received accolades from his colleagues. "Dr. Pagano is one of the few individuals in this country whose contributions range from basic virology at the molecular and cellular levels through in vitro studies of antiviral activity to the conduct of clinical trials with effective antiviral drugs," notes Dr. Gertrude B. Elion, a Nobel Laureate scientist at Glaxo Wellcome cancer center member emeritus. Pagano's

Continued on page 3

INSIDE THIS ISSUE...

Message from the Director 2	Cancer Study & Diet Research 7
Clinical Trials Underway 3	Genetic Counseling 8
In Profile: Bill Cance 5	Soybeans Key To Cancer Control . . . 10
UNC Discovers Tumor Defense 6	Support Groups 11



Dr. Joseph S. Pagano

Director's Message

Coming to completion is our new building. This summer, four structures will merge, linking physically for the first time the center's research programs in basic, clinical and public health sciences. The glass-enclosed, domed atrium will be the space through which everyone passes, a place of encounter that captures the interdisciplinary culture of the center. It will be a place of discovery and light. We anticipate a fall dedication ceremony.

Also coming to completion is my time as director. I am excited about what will come next: a new director who will infuse new ideas and leadership while keeping the best of the past. There is more to be accomplished as Director Emeritus, and I will continue as Lineberger Professor of Cancer Research, with more time for my laboratory program — now come full circle from basic studies of viral genes to the treatment of human cancer grown in mice. I will continue to direct the center's postdoctoral training program, now ranked nationally with those at the top. Attracting the best and the brightest young people to cancer research is one of the more rewarding of our priorities.

Twenty-three years ago when most cancer centers were working on proving therapies that were already available, I knew that we would need to go back to a more fundamental approach. It would be rooted in understanding how cancer arises in the cell, a conviction coming from working with viruses in cells. Folded

in this first plan would be cancer control research through UNC's excellent School of Public Health. Rapid payoffs would come from prevention and early detection of cancer. We were already treating cancer patients, ever mindful of the pressing need for the best therapy. Clinical research would be developed as the Center had something new to offer. We have been steadfast in following that plan. The emergence of cancer genetics, unexpected as it was, fit well with this strategy, but picked up the tempo.

I know full well that patients with cancer want action: not just new facilities, new faculty, and new programs in clinical research, but a beneficial fusion between discovery in the laboratory and the best in treatment and care, and a leap from insight into cancer genes to forecasting cancer susceptibility to guide prevention.

The vision of the center has been tested, and it is now affirmed by the waves of discovery of how cancer arises in the cell and the genes that predict behavior of cancer and susceptibility to those most insidious of diseases. The cancer center has the momentum to be in the vanguard to the finish. ■

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



Cancer Lines is a semi-annual publication of the UNC Lineberger Comprehensive Cancer Center, The University of North Carolina School of Medicine at Chapel Hill.

Dr. Joseph S. Pagano, Director
Dianne G. Shaw, Director of
Communications/Executive Editor
Margot Carmichael Lester, Editor

Please remove me from your mailing list

Name _____

Please add the following to the Cancer Center's mailing list

Name _____

Address _____

City, State, Zip _____

**UNC Lineberger
Comprehensive Cancer Center**
CB# 7295
School of Medicine
University of North Carolina at Chapel Hill
Chapel Hill, NC 27599-7295
(919) 966-3036

PAGANO RECEIVES AWARD

Continued from page 1

These are just a few highlights from Pagano's long career. "The superlative work of the UNC Lineberger Comprehensive Cancer Center is the ultimate measure and tribute to Dr. Pagano's leadership," notes Stuart Bondurant, M.D., interim dean of the UNC School of Medicine.

"While Dr. Pagano would be the first to point out that many distinguished and able people have contrib-

uted to building the Center," Bondurant continues, "it is also true that the Center's greatness rests upon his vision, commitment, personal and scientific standards, scientific competence and personal sensitivity and warmth."

"Dr. Pagano's career exemplifies that work as a scientist can make a difference to society," says Mary K. Estes, Ph.D., a former student who is now professor of molecular virology at the Baylor College of Medicine and president of the American Society for Virology. "He always showed this by

exhibiting a can-do attitude. This doesn't mean that everything always comes easily, but he has shown that one must be persistent to fulfill one's dreams. This attitude translated into real accomplishments for the people of North Carolina."

Concludes Bondurant: "The ultimate result of Dr. Pagano's leadership is tangible improvement in the prevention, diagnosis and treatment of cancer in North Carolina, throughout the nation and the world." ■

NEWS BRIEFS

UNC Clinical Trials Underway

For more information on these and other trials, please call the Clinical Protocol Office at 919-966-4432.

Pancreatic Cancer (LCCC 9620) — This trial uses the first drug, Gemcitabine, which has ever been approved by the FDA for the treatment of pancreatic cancer. Patients with pancreatic cancers that cannot be removed surgically will receive Gemcitabine along with irradiation to the tumor mass. It is believed that along with Gemcitabine's anti-tumor activity, there is also reason to expect that it will increase the effectiveness of the irradiation and make the tumor that much more likely to shrink.

Esophageal Cancer (LCCC 9622) — This trial is for patients with large, inoperable cancers of the esophagus. Patients will receive a combination of three chemotherapy drugs, two of which have been used at UNC to treat this cancer, along

with a new drug, paclitaxel, which has been shown to be very effective in shrinking tumors of the esophagus, head and neck area, breast, lung and ovaries. Paclitaxel also appears to be especially effective when used along with irradiation in patients with cancers of the lung or throat. The trial is to show that this combination of three drugs and irradiation is more effective than the first two were with irradiation and that it can be delivered safely to patients with these tumors.

Recurrent Leukemia and Lymphoma (GW 1002) — This trial will study the effectiveness and side effects of a new drug called ARA-G, which is being developed by Glaxo Wellcome for treatment of patients with recurrent leukemia and lymphoma. Initial work with this drug has shown that it is very effective in treating certain patients with these diseases. This study will examine the drug's ability to shrink these tumors

when the medicine is given by a different schedule than it was in earlier trials. The treatment includes receiving three days of the medicine in the hospital. Treatments are repeated every four weeks if there is evidence of the cancer's improving with therapy.

Ovarian Cancer (GOG-164) — This randomized trial will compare two different treatments in patients who had a good, but not complete, response to standard doses of chemotherapy as initial treatment for their ovarian cancer. One group of patients will receive six additional cycles of standard doses of carboplatin and paclitaxel. The other group will receive a single treatment with high doses of chemotherapy and blood stem cells (stem cell transplant) for any residual ovarian cancer found at the time of the second-look surgery. ■

DEVELOPMENT NEWS

Organizations Fund Breast Cancer Research

Two organizations have lent considerable financial support to the UNC Lineberger Comprehensive Cancer Center for its clinical programs in breast cancer research.

BREAST CANCER RESEARCH FOUNDATION GIFT

The Breast Cancer Research Foundation, founded in 1993 by Evelyn Lauder of the Estee Lauder Companies, gave \$85,000 to the Center for its clinical programs in breast cancer research. Awards were given to 10 grantees across the nation at the Foundation's luncheon at New York City's Metropolitan Club on October 28, 1996. Barbara Walters of ABC News presented the award.

"The Breast Cancer Research Foundation takes great pride in our association with the UNC Lineberger Comprehensive Cancer Center," Lauder said. "Let us hope that by working together, we move closer to answering the many questions about breast cancer and to finally eradicating this dread disease."

U.S. WOMEN'S OPEN CHAMPIONSHIP GIFT

Two new grants from the 1996 U.S. Women's Open Championship will allow the UNC Lineberger Comprehensive Cancer Center to provide new ways to treat breast cancer, increase early detection and improve breast cancer education.

The Championship, held in 1996 in Southern Pines to raise money for

Evelyn Lauder, founder of the Breast Cancer Research Foundation, presents a 1996-1997 Clinical Breast Cancer Research award to Dr. Edison Liu, associate professor of medicine, and Denise Bittner, director of development of the UNC Lineberger Comprehensive Cancer Center.



breast cancer prevention and detection, awarded the Center a total of \$45,000. The funds will be used for the Center's SPORE and Save Our Sisters (SOS) programs.

The UNC Breast Cancer SPORE (specialized Program of Research Excellence) is one of six such programs in the country funded by the National Cancer Institute (NCI). SPOREs are national leaders in breast cancer research with a focus on translating new discoveries in scientific and clinical practices. UNC Lineberger will use the \$25,000 grant to further a frontiers program that will allow for new, one-year research projects targeting breast cancer treatment, early detection and education.

The SOS program received a \$20,000 grant. SOS works to improve breast cancer education for older African-American women living in the Wilmington area. The program, which offers social support and counseling through 128 lay health

counselors, works to increase awareness about breast cancer and partners with community health organizations to offer breast cancer control activities. Using the U.S. Championship grant, SOS will create educational materials and a videotape for the program. SOS was begun in 1990 as a part of the UNC Minority Cancer Control Research of the UNC Lineberger Comprehensive Cancer Center. ■

— compiled by Melyssa Allen

Race For The Cure

Susan G. Komen Foundation

June 7, 1997

Meredith College

Raleigh, NC

For more information, call

919-493-CURE

IN PROFILE**Surgeon/Researcher Links OR and Lab**

Bill Cance is one of those people who actually grew up to be exactly what he told his fourth grade class he wanted to be: a surgeon. Today, if you ask the associate professor of surgery what he likes most about his job, he'll respond without hesitation. "I love taking care of people with complex cancers." A surgical oncologist, he likes nothing better than a challenging case so he specializes in cancers of the upper abdomen and pelvis and breast.

"One-hundred years ago we had nothing in terms of surgical oncology," Cance notes. "Then we had extraordinarily radical surgical solutions, like mastectomy or colostomy. Today we've found we can achieve the same results with much less radical surgery."

That change is especially noticeable in the surgical options for breast and colorectal cancers, he says. For instance, mastectomies can often be replaced with lumpectomies and radiation; colostomies can often be replaced with local excision or other procedures. "That translates into less fear on the patient's part which might lead people to seek treatment sooner instead of avoiding a worst-case scenario. Conquering patients' fear of treatment is critical."

LOOKING BEYOND

Not content to look at cancer solely from a surgical standpoint, Cance shuttles between the operating room and the lab, trading his surgical greens for his lab coat and back again.



Cance's research aims to do the same thing.

"I like to ask the next question," Cance says. "I look beyond the surgical solution to what can we do to impact the disease." That makes him a perfect fit at UNC, where a truly collaborative approach to cancer treatment and prevention is practiced. "At UNC, the three cancer specialties work together to form a multidisciplinary team." That means medical, surgical and radiological oncologists work together in treating each patient. That's rare — in many other institutions, specialists work independently. "Our collaborative environment means better care for our patients — and a stronger research agenda.

"Down the road, novel therapeutics for cancers are the key," Cance predicts. Gene-directed therapies are particularly promising and have gotten his attention. That's not surprising — when he's not treating cancer in the

OR or lab, Cance engages in another kind of gene-based activity: he's an avid gardener who propagates hybrid gladioluses, just like his father.

FROM THE OPERATING ROOM TO THE LAB

Cance and his team have uncovered a new gene, called FAK, which is involved in cellular signaling. It was first found in a human tumor taken from a sarcoma in a UNC patient. "The FAK gene is important because it turns on as tumor cells invade or metastasize. When it turns off, the tumor cells die off," Cance explains. Researchers are studying the gene now to discover how to use it in treating cancer and preventing metastases.

Research is the key to finding new therapies and preventive measures for cancer, Cance notes. At UNC, information is taken directly from the operating room to the lab, providing almost instant access to cancer cells for detailed study. Cance is involved in the entire process, operating on patients and then studying the cancer cells. "The sample is examined for genes abnormally expressed — then we try to figure out what makes it a bad actor or a good actor."

"The key is taking the information we find in the lab back to the patient," he continues. "That's what we pride ourselves on here." ■

NEWS BRIEFS

UNC Scientists Discover Tumor Defense, How To Switch It Off

A naturally occurring mechanism that allows tumors to protect themselves against radiation treatment and chemotherapy has been discovered by scientists at the University of North Carolina at Chapel Hill School of Medicine. The researchers also have figured out how to turn that mechanism off.

If their discovery works as well in patients as it has on a variety of cultured human cancer cells, it could improve cancer treatment and boost survival significantly, the scientists say.

A report on the findings appeared in the journal *Science*. Authors are Cun-Yu Wang, a UNC-CH curriculum in genetics and molecular biology graduate student, Dr. Marty W. Mayo, postdoctoral fellow, and Dr. Albert S. Baldwin Jr., associate professor of biology, all at the UNC Lineberger Comprehensive Cancer Center. The National Institutes of Health supported the research.

"We are very excited about this work and our clinical people here are excited, too," Baldwin said. "We are optimistic that it will improve cancer therapy, and it offers real hope for stubborn tumors like lung cancer. "Depending on the success of animal studies now under way, preliminary human trials could start within a year," he said.

The research concentrated on apoptosis — a natural process of pro-

LINEBERGER SNAP SHOT



Lucy and John Bode of Raleigh, NC, received the 1996 Outstanding Service Award at the Lineberger Center's Board of Visitors meeting. The Bodes are founding members of the Board of Visitors, serving on the Board since its creation in 1984, and on its executive committee. (l-r) Center director Dr. Joseph Pagano; Lucy Bode; John Bode; Center deputy director Dr. Shelley Earp.

grammed cell death that enables the body to clear the way for new cells. Wang, Mayo and Baldwin found that a substance known as NF-kappa B prevents apoptosis from occurring in cancer cells even after they have been subjected to radiation, chemotherapy or another killing compound called tumor necrosis factor. NF-kappa B is a major transcription factor — a protein that attaches to DNA inside the nucleus of cells and turns genes on and off like a switch.

"This factor protects the cells from the killing mechanisms induced by cancer therapies," Baldwin said. "We also found that by blocking activation of NF-kappa B, we make these cancer therapies much more effective in killing tumor cells in tissue culture."

It is not known yet how NF-kappa B prevents cell death or why blocking it causes tumor cells to die, Baldwin said. He and his colleagues assume that the

protein activates expression of or "turns on," genes involved in cell survival.

Two related papers by scientists at the Salk Institute in La Jolla, Calif., and the Massachusetts Institute of Technology also appear in *Science*. The papers report findings — limited to tumor necrosis factor — similar to those of the UNC-CH investigators. As a group, the three reports appear to explain why clinical trials using tumor necrosis factor to fight cancer have been disappointing.

"This is a good example of how basic research on gene expression and cell biology can have important implications for cancer and clinical treatment," Baldwin said. "We didn't start out studying this as a potential cancer therapy but rather to understand its biology. Working at the Lineberger Cancer Center helped us appreciate how our work could translate into a real payoff in cancer treatment." ■

NEWS BRIEFS

New Colon Cancer Study Among Blacks and Whites

A four-year, \$2.6 million grant from the National Cancer Institute is allowing researchers at the University of North Carolina at Chapel Hill Schools of Medicine and Public Health to launch what they believe is the largest study of colon cancer in both black and white races.

Colon cancer has been the second-leading cancer killer in America for the past 25 years. Deaths have been decreasing among whites but increasing among blacks and no large studies have ever been done to find out why.

"We have a lot of questions we hope to answer," said Dr. Robert Sandler, professor of medicine, UNC Lineberger member and principal investigator. "When people move from a low-incidence area such as Africa or Japan to a high-incidence area such as the United States, the disease rates go up. That strongly suggests that something in the environment rather than simply genetics is responsible."

Thirty-three counties in central and eastern North Carolina, 50 hospitals, 800 colon cancer patients and 800 healthy control subjects will be involved.

"For us to come up with valid, useful answers we need as many eligible people as possible to participate." He plans on contacting patients

through the North Carolina Central Cancer Registry by mail and then by phone to seek their cooperation, after getting permission from their physicians.

"One of the strengths of our study will be that we will be able to look at a comprehensive list of factors such as diet and physical activity in such a large group," Sandler explains. This is a great opportunity for people in the community and the University to help one another by learning why blacks in this country are at a greater risk of dying from colon cancer than whites."

Cancer Center members Drs. Robert Millikan and Beth Newman of epidemiology, and Alice Ammerman of nutrition, are involved in the study. Also taking part are Drs. John Woosley of pathology, Lawrence Kupper of biostatistics and Richard Rippe of medicine.

Diet Research For Blacks Could Help Prevent Cancer

A study by the School of Public Health at the University of North Carolina at Chapel Hill is focusing on reducing the risk of cancer among black North Carolinians by helping them change their eating habits.

The program, headed by nutrition professor Dr. Boyd Switzer, is a church-based effort in eight North Carolina counties: Bladen, Craven, Cumberland, Durham, Harnett, New Hanover, Onslow and Pender.

The \$4 million study, funded by the National Cancer Institute, is the first of its kind to focus specifically on black Americans and help them learn about cancer preventive foods, said Switzer, a member of the UNC Lineberger Comprehensive Cancer Center.

"The study's goal is to encourage people to change their diets," Switzer explains. "That is very difficult. We are looking at the barriers and motivators that behavioral change, and we are looking at ways to measure that dietary change." Switzer said encouraging people to eat more fruits and vegetables is important because research studies consistently link the two food groups with preventing cancer.

Blacks are at greater risk of developing cancer and dying from the disease than whites, Switzer said. In 1997, the American Cancer Society estimates that 560 of every 100,000 blacks will develop cancer compared to 469 of every 100,000 whites.

The program will offer educational services aimed at lifelong eating changes that will include food events, health fairs and pastoral assistance through bulletins, sermons and counseling. Also included will be small group activities like kitchen workshops and church member input. Congregations will receive bulletins, a self-help "Food for Health" packet, inspirational booklets and audio tapes.

Participants will go through a dietary risk test and complete a food frequency survey after each phase of the study, expected to be between 18 months and two years. ■

— compiled by Claire Datillo

CLINICAL REPORT

Genetic Counseling and Cancer

Jane (not her real name) is a 35-year-old African American woman. For the past two years, she and her sister have been caring for their mother, Betty. Betty was diagnosed 15 years ago with breast cancer. After a mastectomy, Betty did very well, but cancer recurred in the other breast.

Betty has two sisters diagnosed with breast cancer — three out of six sisters suffer from the disease. Her mother, Jane's grandmother, died from complications of "female cancer," possibly uterine or ovarian cancer.

Jane has realized that cancer, as she put it, "runs in the family." She, her sister and her many cousins worry about getting cancer and about their own daughters. Jane recently read a magazine article about the "cancer gene" and genetic testing. Should she be tested? What is it all about?

A group of medical professionals at UNC Lineberger work with people like Jane every day to help them and their families understand heredity and disease. They work with people with breast cancer, colon cancer, and other types of cancer.

"Genetic counseling is a communication process," Cecile Skrzynia, a genetic counselor says. "We explain to patients and families facts about hereditary diseases and what the risks are to family members. Then we talk about options for management. Basically, genetic counselors help people make decisions and choose options to fit their families."

SEVERAL BRANCHES

Genetic counseling is a broad field, but there are three main branches: prenatal, pediatric and adult-onset diseases. Prenatal genetic counseling involves looking at the genetic makeup of a fetus and estimating outcomes. More people are probably familiar with this kind of genetic counseling, Skrzynia says.

"Pediatric genetic counseling, broadly speaking, is geared towards problems in development," she adds.

But adult onset disease presents a new area of genetic counseling. The key here is detecting the gene or genes which do not work properly. In some diseases, such as Huntington's disease or neurofibromatosis, scientists know there is one gene which determines whether an individual will develop the disease. Cancer is more complicated

because a series of genes must fail before susceptibility is apparent. "The way heredity works in cancer has only recently been appreciated as technologies were developed to isolate genes. Now we can diagnose cancer and test for cancer susceptibility genes, but we can't cure all cancers yet," says Skrzynia.

VALUABLE INFORMATION

"You don't inherit cancer, you inherit susceptibility to develop cancer," Skrzynia says. For instance, genetic counseling is useful in about 5-10% of breast cancer and colon cancer cases. "In general, when there are multiple family members diagnosed with cancers of any sort, counseling can help to sort out sporadic cases."

Information is key to finding cancer early and managing it effectively



Genetic counselor Cecile Skrzynia talks with a breast cancer patient about the patient's family history.

after onset. So genetic counselors act as detectives, looking for clues from past generations and other members of a person's own generation. This creates a diagram of family history which helps to establish the pattern of inheritance specific to a disease.

The idea is to provide people with information so they can form a plan of action. For instance, if you know there is a strong incidence of breast cancer in your family, you might take a more aggressive approach to early detection and prevention. There is also the fear of the unknown, Skrzynia says.

"Sometimes people just want to know they're susceptible. Knowing makes it less scary." On the flip side, however, there are many people who feel what they don't know can't hurt them.

That's why genetic testing isn't for everyone. "Some of us don't want to know about our own genes," Skrzynia admits. Psychological issues complicate matters. "For some there is the benefit of knowing rather than worrying about knowing." Concerns about confidentiality, family impact, and insurance also play a role in deciding about testing.

A LONG JOURNEY

Once the decision to know is made, the journey is really just beginning, and there are many stops along the road. Here's a typical course for a breast cancer patient:

Visit one: Meet with an oncologist, genetic counselor and clinical social worker for a clinical breast exam, treatment options, a review of genetic testing options and a psychological assessment. It can take from two to four weeks for the patient to process this information and decide whether to pursue testing. For those wanting to

NEWS BRIEF

UNC Lineberger Scientists Discover Gene For Melanoma Metastasis

Scientists at Pennsylvania State University and the University of North Carolina at Chapel Hill have discovered a gene dubbed KISS-1 that controls the spread of malignant melanoma — an often deadly form of cancer.

The study — conducted on laboratory mice — stopped the cancer from spreading by inoculating the animals with genetic material from human chromosome 6. The research should aid doctors in distinguishing between melanomas that will colonize other organs from those that will not, and may eventually contribute to the improved treatment of the increasing illness.

Penn State Drs. Jeong-Hyung Lee and Danny Welch, and UNC-CH graduate student Karen Phillips and Dr. Bernard Weissman, associate professor of pathology and UNC Lineberger member,

authored the report. Dr. Jeffrey Trent of the National Center for Human Genome Research helped with the study.

"If this (study) indicates there are targets for therapy that would prevent human tumors from spreading from their original site, that would be a tremendous boon for therapy," Weissman says.

Drs. Isaiah Fidler and Robert Radinsky of the M.D. Anderson Cancer Center wrote in an accompanying journal editorial, "Regardless of formidable challenges, the new understanding of molecular biology of cancer metastasis... offers unprecedented opportunities for the inhibition of therapy of cancer metastasis. We are looking forward to these advancements."

A report on the findings appeared in the *Journal of the National Cancer Institute*. ■

continue the journey and who fulfill the criteria for testing, there is more:

Visit two: Meet with the genetic counselor to review the informed consent and discuss testing — which involves two different labs and several techniques — and have blood drawn. "This testing takes some time," Skrzynia says, "because we check and double check every result. My job is only as good as the results I get."

Visit three: Meet with the three-person team again to get results and discuss follow-up and management.

After the final visit, Skrzynia and her team continue to follow up with patients periodically, "because things change. We are in a long-term relationship with our patients. That gives us a unique opportunity to learn from them and to provide them with state-of-the-art medicine." ■

NEWS BRIEF

Soybeans Could Hold Key To Cancer Control

by David Williamson

A component of soybeans called genistein so far looks extremely promising in preventing cancer, according to UNC medical scientists. Researchers launched a new study of the protein which stops human tumor cells from growing in laboratory culture and inhibits cancer in rats, to investigate the possibilities.

"We know the Japanese, who eat diets rich in soybeans, take in about 80 milligrams of genistein a day, and that's as much as 80 times more than we Americans do," says Dr. Steven Zeisel, chairman of nutrition at the UNC-Chapel Hill schools of public health and medicine. "Japanese people eat much of their genistein in the form

of soybean curd they call tofu, and they have very low rates of breast and prostate cancer compared to us."

Because no scientific data exist yet on what genistein does in humans, the National Cancer Institute asked the UNC researchers to look into it and is providing purified genistein as well as assisting in the study design. The institute is supporting their work with \$785,000 for the first year and likely will expand the studies later.

"The institute has asked us to do two things," Zeisel said. "First, we will study healthy people and patients with prostate cancer to determine how high a dose people can take without having side effects. Once we establish that, we

have an understanding that NCI will fund a larger study in which patients newly diagnosed with prostate cancer are randomly assigned either to receive nothing or receive medium to high doses of the protein."

Several weeks later, when patients go into surgery, researchers will compare their tumors to see if treatment with genistein has affected tumor growth.

"We expect that the protein should

be able to convert cancer cells in a way that makes them less able to divide and grow," said Zeisel, a member of the UNC Lineberger Comprehensive Cancer Center. "We believe that treatment will inhibit the signal that cells use to tell themselves to grow and multiply."

If the research turns out as hoped, it will provide the first evidence that genistein can stop or retard cancer in humans, he said. The institute then will fund a large study of its effectiveness at multiple medical centers across the country.

"There is no reason to think genistein will not be safe because the Japanese already are consuming so much," the scientist said. "We will determine how it is delivered into the blood, the rate at which delivery occurs and whether patients should be dosed twice or three times a day."

Genistein is known as a phyto-estrogen. It is believed to slow cancer to the point where the immune systems of animals — and hopefully humans — can catch up with cancers and eliminate them.

Lineberger Center members Gary J. Smith, professor of pathology and laboratory medicine; James L. Mohler, associate professor of surgery; and Paul Godley, assistant professor of medicine are participating as well as research dietitian Marjorie Busby, and Dr. William D. Heizer, professor of medicine. The scientists will collaborate with others at the Research Triangle Institute who will conduct biochemistry studies. ■

LINEBERGER SNAP SHOT



1996 Lineberger Fellow Award recipients are graduate students (l-r), Keh-Chuang Chin, Suzanne M. Graham and William L. Miller. Fellows receive a \$3,000 supplementary stipend to recognize the excellence of their research activities. They were selected by the Center's Program Planning Committee and honored at the fall meeting of the Center's Board of Visitors, which started the awards in 1987 to encourage promising new cancer researchers. Program funding comes from Best Distributing Co. in Goldsboro and The Brown F. Finch Foundation in Winston-Salem.

UNC Lineberger Comprehensive Cancer Center/ UNC Hospitals Support Groups

The UNC Lineberger Comprehensive Cancer Center sponsors several on-going cancer support groups. For more information about the schedule, contact Anne Washburn, Patient/Family Resource Center Coordinator, 919-966-3097

WHAT	WHEN	WHERE	FOR MORE INFO CONTACT
CANCER SUPPORT GROUP	Every Tuesday from noon-1:00pm	Patient/Family Resource Center Ground Floor NC Clinical Center UNC Hospitals Chapel Hill, NC	Anne Washburn, Coordinator Patient/Family Resource Center 919-966-3097
	Fearrington Group meets the second Thursday of each month	The Gathering Place Fearrington Village Pittsboro, NC	Anne Washburn 919-966-3097
AFRICAN-AMERICAN BREAST CANCER SUPPORT GROUP	The third Thursday of each month from 7:00-8:00 pm	American Cancer Society Office Westgate Plaza 3500 Westgate Drive Durham, NC	Pearl Shelby, Facilitator 919-682-3316
CENTRAL PIEDMONT AREA AFRICAN-AMERICAN BREAST CANCER SUPPORT GROUP	The second Wednesday of each month from 6:30-7:30pm	Clover's Mastectomy and Medical Supply Shop 1242 S. Church Street Burlington, NC	Dondi Alston, Facilitator 910-222-1129 or 910-222-8052
PROSTATE CANCER SUPPORT GROUP	The first Wednesday of each month from 4:00-5:00pm	Chapel Hill Senior Center 400 S. Elliot Road Chapel Hill, NC	Bernadette Williams, Nurse Clinician 919-966-2571
	Fearrington Group meets the last Friday of each month*	The Gathering Place Fearrington Village Pittsboro, NC	*To confirm meeting date, please call Bernadette Williams
CANCER SURVIVORS SUPPORT GROUP	The second Tuesday of each month from 7:00-8:30pm	Chapel Hill Senior Center 400 S. Elliot Road Chapel Hill, NC	Anne Washburn, Patient Ed. coordinator 919-966-3097
BONE MARROW TRANSPLANT GROUP	Every Thursday from 1:00-2:00pm	Fifth Floor Anderson Pavilion Classroom UNC Hospitals	Mary Jackson, Clinical Social Worker 919-966-7850
SANFORD CANCER SUPPORT GROUP	The first Thursday of each month 7:00-8:30pm	Enrichment Center Sanford, NC	Linda Rudeseal 919-775-2692
SPOUSES AND PARTNERS OF CANCER PATIENTS SUPPORT GROUP	The second Monday of each month from 7:30-9:00pm	Chapel Hill Senior Center 400 S. Elliot Road Chapel Hill, NC	Anne Washburn, Patient Ed. coordinator 919-966-3097
GYNECOLOGIC CANCER SUPPORT GROUP *	The fourth Wednesday of each month from 7:00-8:30pm	Chartwell 133 Southcentral Ct, Suite 400 Morrisville, NC	Anne Washburn, Patient Ed. coordinator 919-966-3097

*Co-sponsored with Duke Comprehensive Cancer Center and Rex Cancer Center

LINEBERGER SNAP SHOT



(l-r) Dr. Bill Friday, Wilmington business executive Henry Longley and UNC professor and UNC Lineberger Board of Visitors member Chuck Stone are co-chairing a \$3 million campaign to support the Prostate Cancer Research Program at UNC. The program is focusing on: the molecular biology and genetics of prostate cancer to discover why and how the cancer develops; translation of basic science discoveries into new treatments and procedures; and research into the early detection and prevention of prostate cancer to find cancer early or to avoid it altogether.

UNC Lineberger Center on the Internet

Visit the UNC Lineberger Center on the Internet. Our homepage address is <http://www.med.unc.edu/wrkunits/3ctrpgm/lccc/>

UNC Lineberger Comprehensive Cancer Center
 CB# 7295
 School of Medicine
 University of North Carolina at Chapel Hill
 Chapel Hill, NC 27599-7295
 (919) 966-3036

*Return Forwarding, and Return Postage Guaranteed.
 Address Correction Requested.*

UPCOMING

Lineberger Events

July 4, 1997

“Freedom From Cancer”
 Fundraiser
 Co-hosted with Duke
 Comprehensive Cancer Center
 Wallace Wade Stadium
 Durham, NC

August 2, 1997

“Chasing the Horizon”
 Pediatric Oncology Fundraiser
 Wilmington, N.C.

November 7, 1997

UNC Lineberger Building
 Dedication and Fall Board of
 Visitors Meeting
 Chapel Hill, N.C.

Nonprofit Organization
 U.S. Postage
PAID
 Permit No. 71
 Chapel Hill, NC 27599-1110