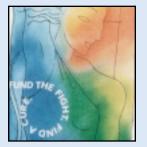
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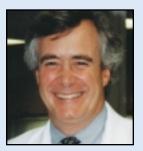
Fall 1998



Director's Message



Unveiling of Semipostal Stamp



Profile:
Tom Shea
& Briefs

Physician's
Goal: Making
Prevention
Work



Gifts to the Center '972'98

Calendar of Events

From the Bench to the Bedside

Clinical Programs Link Basic Science and Patient Care

It's no secret that Manning Drive, home to UNC Lineberger, is a hub of activity. Patients and people in white lab coats dash across the busy street lined by a forest of tall buildings and the occasional crepe myrtle. New buildings and renovations are underway daily. Every so often the Life Flight Helicopter lifts off into the sky or an ambulance rushes someone to the Emergency Department.

Inside the buildings, there's a different kind of hub-bub. Physicians, researchers and other health professionals are working intensely on detecting, preventing and treating disease. From basic research in a lab, to testing possible treatments and methods for cancer screening, to administering to patients, it's inside these buildings where the action really is.

"We've got a team of supremely talented people working together to discover novel therapies in the lab,

put them through the testing process and deliver them to our patients," says Shelton Earp, UNC Lineberger's director. "This continuum

allows us to put forth the most innovative and effective ways of treating, detecting and preventing cancer."

Where It All Begins

It all starts in the lab, where teams of researchers look at the most minute aspects of disease, people and the environment to identify the causes of cancer and then find possible ways of detecting its presence, treating it and preventing it altogether. "Our researchers are a key element in linking basic science

to the patients we see in the clinical

setting," says Beverly Mitchell, UNC Lineberger associate director of clinical science and Wellcome Distinguished professor of medicine and

continued on page



One of nine American women will be affected by breast cancer in their lifetime.

For that reason, researchers at UNC Lineberger are excited by the potential of a breast cancer therapy developed by a team led by Jon Serody, assistant professor of medicine.

"We've been working in my laboratory as well as in Jeff Frelinger's and Ed Collins' lab for over four years in evaluating ways to enhance immune responses to proteins," Serody notes.

The result was a breast cancer vaccine — but it's not a shot. In the world of tumors, a vaccine is a treatment

designed to enhance the immune response to a tumor. "The treatment is designed to work by stimulating a patient's lymphocytes to recognize and kill tumor cells," Serody explains. "It would be delivered to the cells intra-

"Current treatments are inadequate for women with metastatic breast cancer," Serody says. "Often women with this disease have responses to treatment, but these are of brief duration and not durable." So the research team is studying whether the vaccine can help these women's immune systems make their own T lymphocyte response to the proto-oncogene HER2/Neu (the normal

 $continued\ on\ page\ 2$

Mirectors, Oessage



Dr. H. Shelton Earp, III

This issue of Cancer Lines includes articles about research that is being translated from the laboratory to the clinic. Today's standard therapies were de-

veloped from clinical trials of then novel therapies. Tomorrow's new wave of therapies will be based on biologic precepts. Remarkably specific antibodies originally made in mice, then engineered for human use, are just emerging from the clinical trials process. UNC Lineberger trials of Herceptin, the recently FDAapproved antibody for treating metastatic breast cancer, and Rituxan, a new lymphoma therapy with very few side effects, are underway. Such advances represent real progress, improved efficacy and improved quality of life for cancer patients.

But progress is in danger. Unless policies and budgets change, clinical trials could slow. The American

Society for Clinical Oncology (ASCO) has called for an increase in National Cancer Institute funding for studies of novel treatments. NCI is responding to the extent that it can by increasing its commitment to clinical trials, physician/scientist training and information access for patients. The increased budget proposal for NCI just passed by the U.S. Congress will get us started in the right direction.

However, another problem looms: health insurance policies that won't cover participation in clinical trials. At present, only two to three percent of eligible cancer patients enter clinical studies, in part because some carriers and managed care companies decline to cover the costs of even routine care if patients are enrolled in a clinical trial. Patients whose lives are at stake may be risking their financial resources too by entering a trial for a promising drug. Both state and federal laws are being considered to mandate some form of coverage for NCI-sponsored trials. A common sense compromise would be for all insurers to cover the costs associated with routine care for that patient's disease. It would then be up to the

Lineberger and other centers to raise funds for the special aspects of care involved with the novel therapy.

Over and over we hear patients tell us, "If my participation can help someone else, I'll do it." We need to make it possible for them to achieve that goal. We need to translate promising new laboratory ideas into clinical therapies, offering hope to patients in their courageous battle with cancer. We will keep you posted on the progress of funding and insurance legislation in this vital arena.

In closing I want to note that this issue includes our honor roll of donors to UNC Lineberger, the people who make our novel therapies and prevention programs possible. We thank you for your sustained generosity and strive each day to merit that support and to eradicate this disease.



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. H. Shelton Earp, III, Director Dianne G. Shaw, Director of Communications/Executive Editor Margot Carmichael Lester, Editor

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Treating Breast Cancer

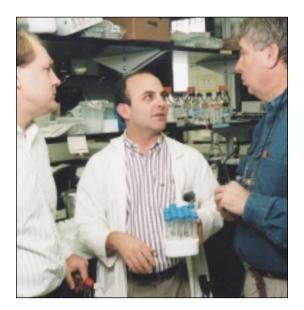
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switches used to control growth and tissue repair) - and whether that response can result in shrinkage of established tumors.

The treatment is available to any woman with breast or ovarian cancer that expresses the HLA 0201 allele, which is approximately 30 to 40 percent of the population. "We have extensive data in the laboratory using this approach to enhance T cell responses and soon hope to have FDA approval for beginning the therapy in patients.

"We're quite interested in this work because it brings together a strong collaborative interaction between basic scientists like Dr. Collins and Dr. Frelinger and a physician-scientist like me in an attempt to deal with a significant clinical problem," Serody notes.

After receiving his undergraduate degree from the University of Virginia and performing graduate work at the University of Virginia Medical School, Serody did his residency at University of North Carolina Hospitals. It was here he became interested in T-cell responses to tumors and bone marrow transplantation (BMT). So he went to the Fred Hutchinson



Drs. Ed Collins, Jon Serody and Jeff Frelinger (left-right) discuss dendritic cell biology.

Cancer Research Center on a fellowship to learn more

"I trained in Chapel Hill and after going to Seattle for BMT training my wife and I decided to come back here for family reasons," he says. "I grew up outside of Washington, D.C., and my wife grew up near Springfield, Mass. We have family in the D.C. and Charlotte areas and decided this would be a good place to come to."

In addition to his work on breast cancer, Serody performs bone marrow transplants clinically and is doing work to develop ways of preventing bone marrow from reacting against patients after transplantation for the treatment of leukemia and lymphoma.

Although he's one of the BMT attending physicians, Serody is focused predominantly on basic research. "In my lab, we have produced leukemia-specific lymphocytes for a clinical trial and are now talking about a trial to use lymphocytes to kill Hodgkin's disease tumor cells." He adds, "The breast cancer work is linked in that we transplant-with modest success-a large number of women with metastatic breast cancer."

The next step for the vaccine trial is FDA approval of its components. "The FDA has had a preliminary look at the trial and only asked us to do one more run to show that the cells can be frozen and are viable at that point," Serody says. "We hope to have approval by the end of the year."

Claire Dattilo and David Williamson contributed to this story

Clinical Programs

continued from page 1

pharmacology. She says three new members of the research team exemplify this:

- Suzanne Kirby, UNC-trained in hematology and oncology, is working with Oliver Smithies on the role of an engineered growth factor receptor gene in increasing bone marrow cell proliferation. She's studying how to make bone marrow stem cells grow faster than normal cells in an effort to make bone marrow transplants more successful.
- **David Ollila** has joined the Surgical Oncology division after completing a fellowship at the John Wayne Cancer Institute in Santa Monica, California. He is one of the pioneers in sentinel lymph node biopsy, which is a technique designed to find the first lymph node leading from a cancer, to identify potential cancer cells that have spread from the tumor. This technique will enhance physicians' ability to detect microscopic cancer metastases and change our treatment accordingly. He also brings immunotherapy protocols for melanoma patients which will fold in with the data gathered from the sentinel nodes.
- **Robert Orlowski**, who trained in oncology at Johns Hopkins, has a special interest in novel treatments for lymphoma. He's working with proteosome inhibitors to develop clinical trials for refractory leukemia and lymphoma.

"Each of these people is trained in laboratory investigation *and* clinical care," Mitchell says. "They are integral to the transition between basic research and new approaches to patient care."

Tests and More Tests

From the lab bench, possible treatments must be rigorously examined in a series of clinical trials. "At any given time, we might have 250 trials open," notes Tom Shea, director of UNC Lineberger's

protocol office and the director of the Bone Marrow Transplant Program (see related story, page 4).

The protocol office has been busy keeping up with UNC's active researchers.

Last year, 100 new studies opened leading to the enrollment of 376 people onto cancer-related clinical trials. Here's a peek at three

trials currently underway.

• Lineberger 9734 is a trial for the detection of malignant cancer cells in the lymph nodes of women undergoing surgery for breast cancer. The test will determine the efficacy of using a radioactive compound to tar-

get lymph nodes most likely to be cancerous. If it works, the procedure could help surgeons predict the likelihood of cancer in certain areas and reduce the need to do extensive surgeries. Ben Calvo, assistant professor of surgery, is the principal investigator.

- Lineberger 9620 is a trial for combining radiation therapy and chemotherapy in the treatment of pancreatic cancer. Data show that the effectiveness of radiation can be increased when used along with chemotherapy such as gemcitabine. If it's successful, lower doses of radiation could be used with improved outcomes for patients with pancreatic cancer that is otherwise inoperable. The principal investigator is Joel Tepper, chairman and professor of radiation oncology and UNC Lineberger associate director of clinical research.
- Lineberger 9719 is a trial to determine whether patients with metastatic non-small cell lung cancer do better if they stop therapy after a fixed period of time, for example four months, or continue therapy until their cancer shows evidence of progression. The study may show

that the most benefit from chemotherapy is accrued early in treatment and that continuing therapy may result in more side effects without

prolonging remission or improving rates of survival. UNC Line-

berger is the lead institution of approximately
13 centers around the state and country participating in this important trial. Mark Socinski, assistant professor of medicine, is the principal investigator of this nationwide study.

"We develop trials based on research done here," Shea explains, "and we also participate in

national studies to evaluate effective treatments developed in other centers across the country, as well. It's all part of our mission to move basic scientific research findings through to the patient."

The End of the Line

After groundbreaking research and extensive testing, the most promising therapies become available to patients in the form of quality care.

Providing the best care of patients means taking advantage of UNC Lineberger's culture of collaboration, says Bill Cance, UNC Lineberger associate director for clinical care and associate professor of surgery. "Based on the success of early teams like ENT and gynecology/oncology," Cance says, "the Center has formalized other cross-functional relationships to create more multidisciplinary teams for treating adults with cancer." The roster includes: breast, gastro-intestinal, genital/urinary, gynecologic oncology, head and neck, leukemia and lymphoma, melanoma, neuro-oncology, and thoracic.

The team concept takes a holistic approach to health care, involving professionals from nursing, surgery, radiology and other disciplines. That allows patients to do what Cance calls one-stop shopping. "They can come in and see all the people they need in one place at one time. That makes it much easier for them."

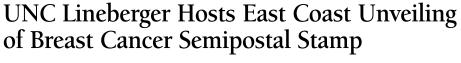
In addition to streamlining the treatment process, the team approach has other benefits. "Patients in these specialty areas are really embraced by the whole team," Cance says. "They know there's an entire group—contact people, nursing support, physicians and care coordinators—working with them. That makes patients much more secure in their diagnosis and treatment." And that has a positive outcome on results. "The emerging data show that patients treated by teams in specialty centers simply do better."

A Good Mix

These clinical programs illustrate how UNC Lineberger translates promising laboratory science into real-world applications. "Meaningful, relevant cancer research requires a strong commitment to bringing basic science out of the lab and into the clinical setting," Earp says.

"Our clinical programs do just that by effectively blending high-tech lab work and state-of-the-art testing with high-touch patient care."

by Margot Carmichael Lester





UNC Lineberger hosted the East Coast unveiling of the nation's first research "semipostal" stamp on May 11. The stamp, now on sale, is the first to have its net proceeds from sales earmarked for research organizations. Speaking at the event were: UNC President Molly Broad; Lineberger Director Dr. Shelley Earp; Senator Lauch Faircloth, who co-sponsored the bill creating the stamp; Sue Moore, breast cancer survivor and UNC Lineberger Board of Visitors member; Col. Irene Rich, Director, Congressionally directed medical research programs, Department of Defense; and Robert McLain, Chapel Hill Postmaster.

Catching Up With Tom Shea

Hunting down a free moment with Tom Shea can be a real challenge. He is director of the Lineberger Cancer Center's Bone Marrow Transplant Program (BMTP) and the UNC Protocol Office, and has just recently come off a rotation as attending physician. In addition to teaching classes at the UNC School of Medicine, he is involved constantly in clinical research and developing clinical trials for new cancer treatments. On top of all this, Shea is an outdoor enthusiast who recently returned from a vacation spent camping with his family in Newfoundland and Nova Scotia. He's a very, very busy man.

Between classes, Shea describes his primary research focus in autologous transplantation, a treatment involving the infusion of a patient's own cells after radiation or chemotherapy. "You get better results using higher doses of radiation or chemotherapy, but you destroy a lot of the patient's healthy cells as well. With autologous transplants-you take stem cells out of the blood stream or from the bone marrow, and freeze them. Next, you treat the patient with very high doses of radiation or chemotherapy, and then infuse the stored cells back into the patient."

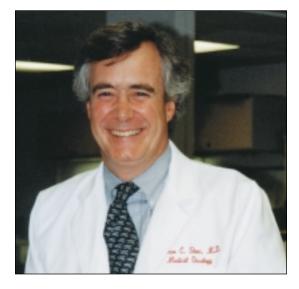
As a consequence, patients are able to use their own cells to recover from cancer therapy instead of depending on donors for healthy cells. This reduces both the risk of the body's rejection of foreign cells and the need for time-consuming and often unsuccessful identification of matching

Through his research in high-dose cancer therapies and in his role as the BMTP

director, Shea has played no small part in contributing to the program's successful five-year existence. Word on the program has traveled wide. In addition to North Carolinians needing transplants, Shea says, the BMTP has drawn patients from as far away as Massachusetts, Louisiana and Florida. Since its formation in 1992, the BMTP has provided treatment for patients with leukemia, lymphoma, Hodgkin's disease, multiple myeloma, breast cancer, ovarian cancer, aplastic anemia, sickle cell disease, sarcoma and neuro-

What distinguishes the program are its topflight clinical researchers who develop groundbreaking transplant protocols and unique institutional features such as a combined adult and pediatric unit that focuses on the different needs of both grown-ups and children. Add to this the committed support of staff from nursing, social work, recreational therapy, dietary, and transfusion medicine, and a superb facility designed to protect patients from infection, and you have the ingredients for excellence that characterize the program at UNC.

When Shea joined the BMTP, it was a homecoming of sorts. He first came to Chapel Hill as an undergraduate at UNC in 1970, the same year his father moved down from New York with Burroughs-Wellcome. After completing his undergraduate degree, the younger Shea traveled in



India, Nepal and Afghanistan before returning to UNC to attend the School of Medicine. Following his graduation in 1978, he spent a year working at a mission hospital in Nicaragua, returning one week before the revolution in 1979. Back in the states, he moved to Boston where he spent five years at Beth Israel and three years at the Dana-Farber Cancer Institute. After four years at the University of California at San Diego, Shea came back to Chapel Hill in 1992 to begin work with the BMTP.

By completing the circle and returning to his alma mater, the peripatetic doctor has contributed significantly to the reputation of UNC Lineberger as an institution dedicated to providing patients with the safest and most effective transplant protocols available.

"Our mission is to research new treatments and take that research from the lab to patients," he says. "All that leads to providing good care."



Breast Cancer Gene Function Discovered

A tumor-suppressor gene involved in breast and ovarian cancer susceptibility plays a central role in one of the body's most important mechanisms for repairing DNA when that genetic material becomes damaged, UNC-CH researchers have discovered.

Using specially altered mouse embryo cells deficient in the gene BRACA1, the scientists found the gene directly or indirectly participates in what is called transcription-coupled repair.

"BRCA1's exact role is currently unknown," says Steven Leadon, professor of radiation oncology at the UNC-CH School of Medicine and Lineberger member. "This new work is important for two reasons. First, it provides probably the most direct evidence that BRCA1 is involved in DNA repair. Second, it will give us and others

a useful assay, or test, to look at functional changes in the gene."

Such information is critical to knowing how cancer starts and how it might be prevented or treated more

effectively. Leadon compared it to understanding what various parts of a car engine do before being able to fix it. "This is the first direct evidence of a funtion for this tumor-suppressor gene," notes Lori Gowen, a graduate student working with Leadon on the research. "It helps explains how the gene may be involved in cancer."

Joining Leadon and Gowen in the research are technicians Anna Avrutskaya and Anne Latour, and research assistant professor of medicine and Lineberger member Dr. Beverly Koller.

by David Williamson

New Brain Tumor Therapy **Tested**

A drug-impregnated wafer that releases chemotherapy directly into brain tumors that have spread from other cancers is now undergoing safety tests in patients. The FDA has already

approved the biodegradable polymer wafer for treating recurrent malignant brain tumors which originate in the brain itself.

Results of this multi-center phase-1 clinical trial may have treatment implications to prolong the lives of an estimated 50,000 patients in the U.S. with brain cancer metastases, according to principal investigator Dr. Matthew Ewend, assistant professor of neurosurgery at UNC-CH's School of Medicine and a UNC Lineberger member.

"Many drugs cross the blood into the brain poorly," he says. "In order to get chemotherapy into the brain, you have to choose drugs that have some ability to cross the blood-brain barrier and then you have to give very high doses which come with lots of side effects." The treatment works because the drug is released as the wafer dissolves, allowing for high local doses of chemotherapy with no systemic toxicity.

According to Ewend, about 20,000 cases of primary brain tumor occur each year in the U.S., compared to about 50,000 metastatic brain malignancies, of which 90 percent arise from lung, breast and melanoma skin cancers. "The average survival with these brain tumors is less than one year," Ewend notes. "This treatment helps prolong that."

continued on page 8

Physician's Goal: Making Prevention Work

If you're like most Americans, you don't go to the doctor to prevent illness, you go to treat

'That creates a special challenge for physicians because generally the bulk of the office visit is taken up with treating the acute or chronic condition," explains Russ Harris, Lineberger member, associate professor of medicine, and co-director of

UNC's Program on Health Promotion and Disease Prevention. "That leaves little time for preventive care activities such as counseling, screening and immunizations."

So how do you improve doctors' ability to convey important wellness and prevention information? Harris and a team of researchers are studying the interface between patients, doctors and nurses to identify innovative yet practical ways to do just that in a project called "Making Prevention Work."

They started with the structure of a doctor's practice. "At present, the person in the office who provides information and advice about preventive care is the physician," Harris notes. But in many situations, nurses could perform some of those general tasks with a doctor's supervision.

"For example, who takes your blood pressure when you visit the doctor?" Harris asks. "The nurse. That's basic screening and it's done almost 100 percent of the time. Why not take certain other preventive activities and allow the nurses to perform them?" This will ensure the activities are administered and will give doctors more time with patients.

One key to making the system work is understanding that all preventive care activities are not created equal. "Some definitely have greater benefit than others," he says.

The list of potential preventive care activities is longer than your arm. So Harris advocates paring the list down. "If you look at which

"It will take some time and effort to change the way a doctor's practice works, but the physicians we're working with know it will result in better patient care."

> activities provide the largest benefit for each age and gender group, the lists are no longer unwieldy."

> With a more manageable list, medical staff can more easily order the most beneficial preventive activities for each patient's age, sex and medical condition.

> Harris says computers can also assist health care workers in preventing disease. "Most offices today keep financial records on computer," Harris says, "so why not put that capability to work for patient care?" He is developing ways doctors' offices can search their patient files to find people who would benefit from certain types of

preventive care, such as breast or colon cancer screening.

"Then there would be an automatic flag on the file so staff would know what preventive care a patient needs," Harris says. For example, the nurse could discuss mammography, provide information and schedule the appointment. "In questionable situations, where there are special

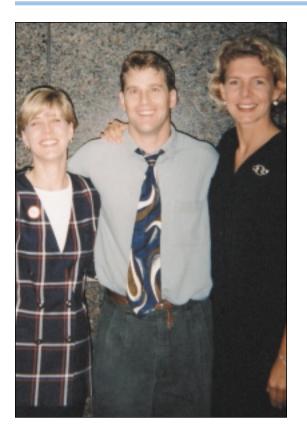
> concerns, the physician would get involved."

> Working together, these elements can translate into more appropriate care for the patient. "It will take some time and effort to change the way a doctor's practice works, but the physicians we're working with know it will result in better patient care," he says. "It's one way to ensure that appropriate preventive activities are offered regularly to every patient in a practice."

Harris is uniquely qualified to lead this project-he was in private practice in rural North Carolina for eight years before returning to UNC. "The fact that I've got firsthand experience in managing a practice helps me understand what physicians are up against," he says.

"Our goal is to develop a system and materials that are easy for physicians and staff to use," Harris continues. "The result," Harris says, "will be increased use of preventive activities which could help physicians uncover opportunities to reduce the risk of serious illness."

And that's the key to making prevention



Cancer-Related Fatigue Symposium Held

The UNC Lineberger "Cancer-Related Fatigue" symposium, sponsored by Ortho-Biotech, attracted 300 cancer patients and family members. The program included a keynote address from Dr. Sandra Hazra, a cancer survivor and nationally known expert on fatigue, and a lunch talk by Scott Burton, a cancer survivor who shared his insights with humor and a display of acrobatic skills, as well as sessions on pain, exercise, stress management and massage.

Pictured left (left to right) are Stacy Guhl, Ortho-Biotech representative; speaker Scott Burton; and Anne Washburn, UNC Lineberger Cancer Patient/Family Resource Center coordinator.

As part of the event, a display of quilts created by ovarian cancer survivors made its first stop on a tour of several North Carolina cancer centers and treatment hospitals and Cornucopia House Cancer



Support Center. The tour marked Ovarian Cancer Awareness Month sponsored by the Triangle chapter of the National Ovarian Cancer Coalition.

Shown here are: Karen Binder (left) ovarian cancer survivor in front of her quilt, "The Tree of Life Healing Quilt, wrought by the loving hands of the family and friends of Karen and Ron Binder," and Anne Washburn (right).

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Your gifts support and enrich the Center's many cancer research, treatment, and prevention programs. We are grateful for the hope and trust expressed by these individuals and organizations.

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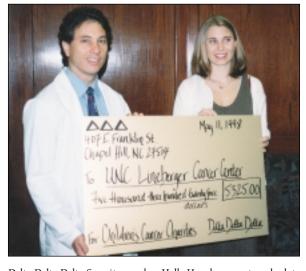
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Delta Delta Delta Sorority member, Holly Hough, presents a check to Dr. Joe Wiley of Pediatric Hematology-Oncology (left). The sorority sponsored a hole-in-one golf tournament to raise funds for children being treated for cancer at UNC. Despite the fact that the tournament was rained out, the Tri-Delta still raised over \$5,000. They plan to try again next year.

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Nick and Lee Garrett, chairs of the Chasing the Horizon fundraiser for Pediatric Oncology at UNC Lineberger Comprehensive Cancer Center, thank the nearly 300 people who attended the annual dinner-dance in Wilmington on September 12. This year's event raised more than \$70,000 for Cancer Center research and clinical programs benefiting children with cancer. The Garretts are also members of the Cancer Center's Board of Visitors.

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Anne Washburn (left), UNC Lineberger Patient/Family Resource Center coordinator shows Ashley Clark (right), president of Zeta Tau Alpha Sorority, a turban available for loan to UNC cancer patients. The sorority has funded patient support programs at UNC such as massage therapy and others.

Briefs

continued from page 4

Also participating in the trial are: Brigham & Women's Hospital in Boston, The University of Vermont in Burlington, H. Lee Moffit Cancer Center in Tampa, Veterans Affairs Medical Center in Seattle, and Emory University Medical Center in Atlanta.

compiled by Mary Lindsay Weatherly

New Technique Restores Gene's Function

A possible new form of gene therapy designed to mask genetic mutations instead of cutting away and replacing them has been developed by scientists at the UNC-CH School of Medicine and Bern University in Switzerland. The technique involves using small RNA molecules to block defective processing inside cell nuclei of messenger RNA that codes for the blood protein beta-globin.

Since the short RNA fragments block the faulty processing sites, cell's splicing machinery can only use functional, non-mutated locations. What results is steady production of healthy "messengers," which then relay accurate genetic instructions into cell cytoplasm where normal proteins assemble. The work offers hope that one day scientists will be able to cure, not just treat, beta thalassemia, an inherited deficiency of hemoglobin, the essential protein that carries oxygen and gives blood its red color, according to Dr. Ryszard Kole, professor of pharmacology

and Lineberger member. Like sending imperfect plans to a factory, errors in messenger RNA production results in defective or inadequate protein production. In severe cases of untreated beta thalassemia, those errors lead to acute anemia and death at a young age.

In their work, researchers introduced modified RNA molecules into cells containing mutated genes that cause beta thalassemia. They modified the molecules by incorporating into them sections of RNA complementary, something like a mirror image, to the defective sites. Adding these modified molecules led to in-

creased levels, about 65 percent, of correctly spliced messenger RNA that carried the code for globin, a sub-unit of hemoglobin. The research demonstrates that such molecules can be permanently established in cultured cells. The ultimate aim is to incorporate such particles into patients' bone marrow where red blood cells, which carry hemoglobin throughout the body, are produced.

The National Institutes of Health, the Roche Research Foundation and the Swiss National Science Foundation supported the research.

by David Williamson

UNC Lineberger in the MARCH



UNC Lineberger participated in the MARCH on Washington held on September 26. Members of the UNC delegation are pictured on the Mall. More than 150,000 people from across the country participated in the MARCH to show their support for increased funding for cancer research. UNC Lineberger also held a candlelighting

on Friday, September 25 to honor cancer survivors and those whose lives have been touched by cancer. The ceremony featured talks by two cancer survivors: Professor Chuck Stone, prostate cancer survivor and Walter Spearman Professor of Journalism, and Karen Binder, ovarian cancer survivor and chairperson of the Triangle chapter of the National Ovarian Cancer Coalition.

calendar of events

FEBRUARY 1999

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

Lineberger Club
Annual Brunch/Basketball Game.
Kenan Center, Chapel Hill, NC.

MARCH 1999

23rd Annual
Symposium. "Genetic And Regulatory
Mechanisms in Human Cancers."

The Friday Center, Chapel Hill, NC.

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