

Cancer Lines

The newsletter for UNC Lineberger Comprehensive Cancer Center and the NC Cancer Hospital

Spring 2009

Epigenetics: Unlocking Clues to Cancer

The field of epigenetics - the study of genetic changes that happen in cell division, but which don't change the underlying DNA code in the human genome - is providing new keys to unlock cancer's secrets.

While the general public is used to thinking about DNA as a hereditary set of code that only occasionally changes

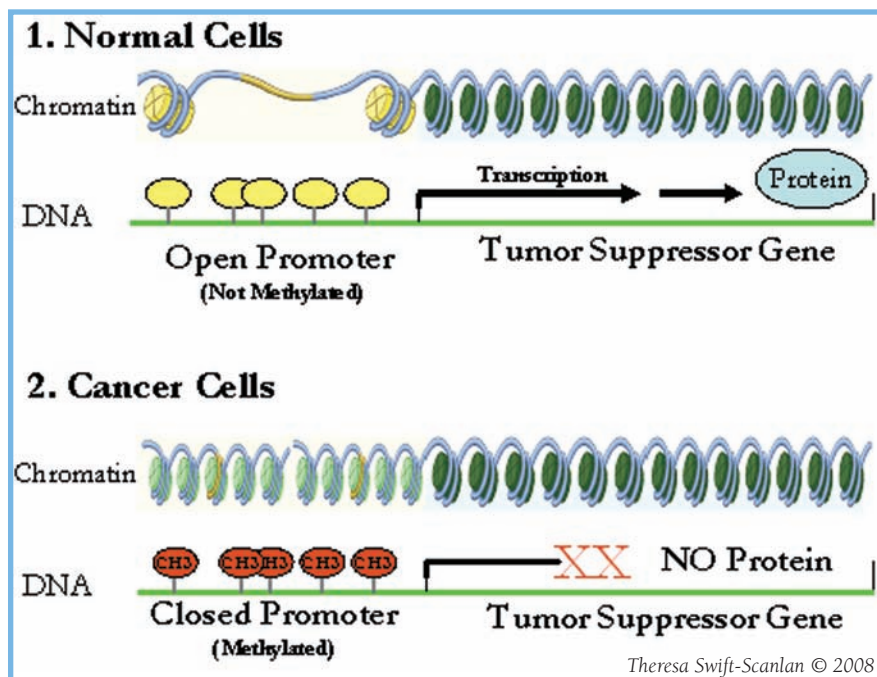
through mutation, researchers working to unlock the secrets of cancer study cellular DNA and its associated proteins - called chromatin. The interaction between these two building blocks of cell replication can go off-track. When this happens, "The instructions embedded in the DNA code cannot be copied and the proteins required for cell regulation aren't made," explains Theresa Swift-Scanlan, PhD, assistant professor in the School of Nursing. "This results in cells that are unregulated and can grow out of control - the defining hallmark of cancer."

"Multiple UNC Lineberger scientists are working collaboratively to unlock the secrets of epigenetic processes. They are learning how to apply that knowledge to cancer diagnosis, prognostication and therapy," says cancer center director Shelley Earp, MD.

Yi Zhang, PhD, professor of biochemistry and biophysics and a Howard Hughes Medical Institute investigator, discovered and catalogued many of the proteins involved in cell replication. This database provides a map for creating targeted drugs. "The fate of cells can be changed," he says. "Cancer cells are defective cells. If we can reverse the epigenetic modifications that result in cancer cells, we can potentially return the cell to its normal status."

Stephen Frye, PhD, professor of medicinal chemistry and natural products, and director of UNC's Center for Integrative Chemical

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DNA methylation can lead to alterations in chromatin structure that result in silencing of gene expression. #1 shows normal cells where the chromatin in the promoter region of a generic tumor suppressor gene remains open, allowing the instruction embedded in the DNA code to be copied into a tumor suppressor protein. In this way, the proteins required for cell regulation are made and can do their job. #2 shows that gene methylation can lead to a series of changes that closes the chromatin, limiting access to DNA, thereby blocking the transcription of the gene instructions that code for proteins involved in cell regulation. Therefore, the tumor suppressor protein is not made, resulting in cells that can grow out of control - the trademark of cancer.

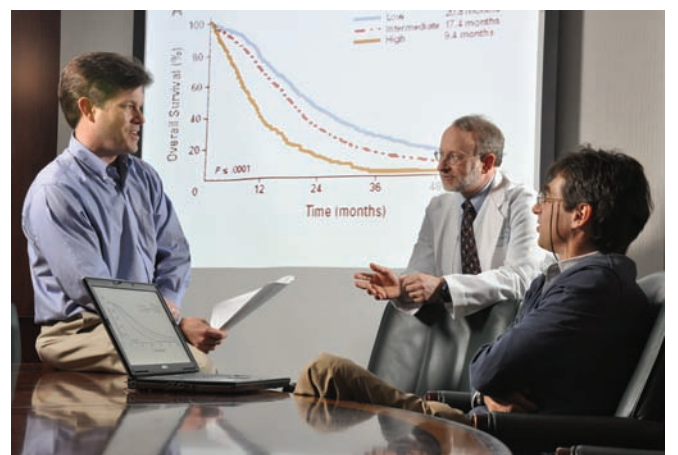
Outcomes Research Improves Patient Care

Advances in cancer treatment provide many options for patients. But it's not always clear which therapy will be most effective for a particular individual.

"Understanding the wide spectrum of outcomes from different treatments can help inform the next generation of research that seeks to develop new treatments with ever-improving results," explains Bill Carpenter, PhD, research assistant professor in the Department of Health Policy and Management.

Researchers at UNC Lineberger analyze data from a variety of sources, including clinical trials, large-scale non-interventional patient studies, medical records, surveys and census data. This information provides insight about topics ranging from survival rates and quality of life during and after treatment, to the type, number, and severity of side effects and the cost-effectiveness of treatment. "Together with an

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Drs. Bill Carpenter, Richard Goldberg and Til Stürmer bring together expertise from health policy and management, medicine and epidemiology to improve patient outcomes.

the inside line up

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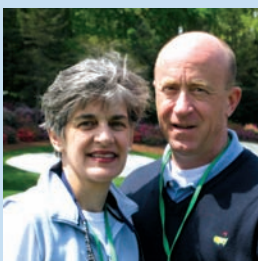
3 Lineberger Club Luncheon



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director's *Message*



Dr. Shelton Earp

During these tough economic times, every dollar we spend must move us a step closer to fulfilling our mission: to reduce cancer occurrence and death in North Carolina and the nation. This mission received a ringing endorsement in 2008 from

Lineberger's over 5,000 private donors and from the General Assembly's funding of North Carolina Cancer Hospital and the University Cancer Research Fund. These endorsements will help us save lives and reduce suffering from cancer in North Carolina and beyond.

In practice, this mission covers a panorama of activities ranging from discovery to innovation to delivery. Our work fits together in complex ways, and we often find that an investment in one area yields unexpected benefits in others. We've been calling these outcomes the multiplier effect.

We see the multiplier effect in the way that the UCRF's investment has helped position the university and UNC Lineberger Comprehensive Cancer Center to take advantage of opportunities like the National Institutes of Health's Clinical Translational Sciences Award program. The infrastructure in place as a result of the UCRF helped UNC secure an additional \$35 million in grant funding over five years.


It helps us take advantage of promising opportunities and innovative ideas by providing startup funds through Lineberger donor-supported pilot projects and the UCRF Innovation Awards, generating publications and new external grant funding based on the data

produced during the startup phase. We are also uniquely positioned to benefit from federal recovery initiatives such as the American Recovery and Reinvestment Act, signed into law in February. The economic stimulus package provides an unprecedented increase of \$8 billion in basic research funding for the NIH. The president's 2010 budget - currently under discussion in Washington - proposes doubling the National Cancer Institute's funding over the next ten years.

We see a multiplier effect every time we make a strategic hire of a top-notch physician or researcher, people whose life's work is to save lives and prevent, halt and reverse the effects of cancer. In addition to giving us the capacity to see more patients, the more than 16 new highly-trained physicians we've hired since the UCRF was established bring expertise to UNC that benefits several of our multidisciplinary, patient-focused treatment programs. Donor-supported early phase clinical research projects harness their expertise, allowing us to offer new and different treatments, get involved in more leading-edge clinical trials and create a broader range of coordinated support programs for patients going through treatment.

New researchers are multipliers, as they join the top-notch faculty already here as a new collaborator on high-impact projects that successfully compete for external funding. Our ability to attract faculty who already successfully compete for funding from agencies like the NIH brings more research dollars into the North Carolina economy. The community of interest we have around the problem of cancer benefits multiple schools and colleges at UNC, supporting them in fulfilling their research, educational and service objectives and making a better future for our state.

The most important multiplier, however, is one that's hard to quantify. It is the lives saved and the quality of life gained by cancer patients who stand to benefit from new discoveries and innovative treatments developed here. It's the years of productive health gained by people who

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benefit from what we learn about the causes of cancer, the behavior of risk factors and the complex interaction between genes and the environment. It is fathers who get to walk their daughters down the aisle at their weddings, great-grandmothers who live to see the next generation, young mothers who see their children graduate from high school and college and brothers and sisters who don't have to say goodbye too soon.

At the end of the day, these are the multipliers at the heart of our mission. ●

Lineberger Club Celebrates Survivors, Donors and Tar Heel Victory

More than 300 people attended the 2009 Lineberger Club event in February, enjoying a lunch at the Carolina Club and a UNC men's basketball team victory over the University of Virginia. The event honors the more than 450 Lineberger Club members who annually donate \$1000 or more to UNC Lineberger's cancer treatment, research and prevention programs. Guests at the lunch included Lieutenant Governor Walter Dalton and his wife, Lucille, Speaker of the House Joe Hackney and his wife, Betsy, and Senate Majority Leader Tony Rand and his wife, Karen. This year's program featured patient Christina Gianoplus, from Wilmington, NC, who shared her inspiring story of her treatment for colon cancer by Dr. Richard Goldberg, UNC Lineberger associate director. ●

Pictured (left to right) are Shelley Earp, MD, UNC Lineberger director, Richard Goldberg, MD, UNC Lineberger associate director, and the Gianoplus family: Nicholas, Christina, Alex and Greg.



Epigenetics

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Biology and Drug Discovery, also studies chromatin, which he says "is implicated in all processes of cell differentiation and is highly relevant to the misregulation of such processes in cancer."

"I'm focused on discovery of chemical tools tailored to targets that regulate chromatin state, some of which will have the potential to treat cancer." Before joining UNC, Frye co-invented GSK's Avodart, a drug that shrinks enlarged prostate glands and is being studied as a preventative for prostate cancer.

Other UNC Lineberger scientists are focusing on what 'goes wrong' in cells to cause cancer. Ian Davis, MD, assistant professor of pediatrics, is investigating how the molecular switches that control the 'on' and 'off' states of genes go awry in cancer, particularly childhood cancers. "We are working toward a broad and deep understanding of the rules that govern gene regulation in cancer," he says. "By understanding how cancer cells are dependent on gene expression and epigenetic changes, we hope to inform the development of targeted therapies to block them."

Brian Strahl, associate professor of biochemistry and biophysics, has an NIH grant to study epigenetic modifications in yeast, which has many of the epigenetic markers found in humans. "It's not a true cancer cell, but we're learning the nuts and bolts of how the epigenetic system works," he explains. "If we can manipulate enzymes that modify or control the epigenetic landscape, we have a chance to regulate the potential for cancer or prevent its spread."

Several UNC Lineberger studies involve specific cancer types and have important implications for how patients will be treated in the future. For example, early diagnosis of melanoma is crucial because survival rates are extremely different between localized and metastatic disease. But

Multiple UNC Lineberger scientists are working collaboratively to unlock the secrets of epigenetic processes. They are learning how to apply that knowledge to cancer diagnosis, prognostication and therapy.
- Shelley Earp, M.D.

doctors can have a difficult time discerning melanoma from benign moles based on appearance and pathology.

Kathleen Conway Dorsey, PhD, research assistant professor of epidemiology, and Nancy Thomas, associate professor of dermatology, received an NCI grant to identify DNA methylation patterns - a cancer mechanism that inactivates the 'brakes' on cell growth and causes tumors. These patterns can distinguish melanomas from benign moles with high sensitivity, specificity and reproducibility.

"Comprehensive analysis of promoter methylation, which occurs widely in human melanomas, offers a promising tool that will be a first step toward the development of standard diagnostic tests, thereby decreasing under- and over-treatment," Dorsey says.

The long-term goal of three breast cancer research projects is to decrease mortality by better matching treatment decisions with each woman's clinical history and tumor type.

Dorsey's project focuses on methylation in breast cancer. The Carolina Breast Cancer Study (CBCS) found that African Americans are more likely to develop tumors that generally indicate a poorer prognosis compared with those of white women. Dorsey received a Susan G. Komen grant to study the basis for these differences using the new Illumina methylation

microarray. "Methylation of cancer-related genes has been found to be related to clinical features of breast tumors, response to endocrine therapy, and outcomes."

Swift-Scanlan received an NIH award and a Susan G. Komen grant to study DNA methylation in breast tumor subtypes. "Some gene methylation changes may be important in early detection and prognosis because they occur early in tumor development and may vary with history of estrogen exposure," she said. "Improved prognosis is possible if gene methylation changes can reliably identify tumor subtypes and predict clinical outcomes such as cancer recurrence and response to treatment."

Another breast cancer project focuses on technologies and concepts developed in model systems and applying them to the treatment of patients. One example is FAIRE, which stands for Formaldehyde-Assisted Isolation of Regulatory Elements. FAIRE is a simple, low-cost way to isolate and identify unpackaged regions of DNA across the whole genome. This information is valuable, because when DNA is unpackaged, or "open", it indicates that the underlying information is being used by the cell. "Using FAIRE, we propose to identify the entire set of DNA-encoded regulatory elements active in 100 human breast tumors excised from women treated at UNC Hospitals," says Jason Lieb, PhD, associate professor of biology. Using tumor samples representative of all known molecular subtypes from UNC's Tissue Procurement Program, Lieb has already identified open-chromatin signatures that have implications for treatment. ●



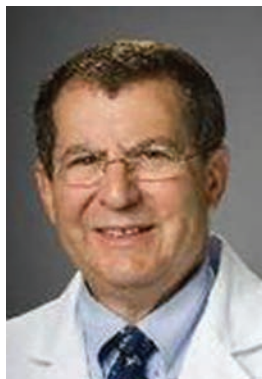
Yi Zhang, professor of biochemistry, and Brian Strahl, associate professor of biochemistry, use telephone cords to illustrate how strands of DNA are packaged in our cells. Photo by Steve Exum.

Dr. Hyman Muss to Lead New Geriatric Oncology Program

Hyman B. Muss, MD, has joined the UNC Lineberger Comprehensive Cancer Center as a professor of medicine and will develop and lead a new program in geriatric oncology.

Muss comes to UNC from the University of Vermont Cancer Center where he served as associate director of clinical research and division director of hematology/oncology. He was previously at Wake Forest University Comprehensive Cancer Center in Winston-Salem, NC, where he was a professor of medicine and associate director for clinical research.

Muss said, "Our objective for the Geriatric Oncology Program will be to ensure the highest quality of oncologic care for older patients while factoring in the patient's functional status and



Dr. Hy Muss

other non-cancer illnesses. The program will develop clinical trials integrating prevention, treatment, quality of life, and translational research focused on older patients with cancer. Additionally, the program will develop educational programs for students, house staff, fellows, and faculty concerning aging and cancer to insure the development of research and clinical programs dedicated to advancing cancer care for older patients."

Shelley Earp, MD, director of UNC Lineberger Comprehensive Cancer Center, said, "Simply put, Hy Muss is a national treasure. His clinical research accomplishments are outstanding, but are frankly secondary to his skills as a doctor, teacher, and colleague. We are thrilled that the

University Cancer Research Fund has allowed us to bring Hy back to North Carolina to start the new, much needed Geriatric Oncology effort."

Muss earned his undergraduate cum laude degree in chemistry from Lafayette College in Easton, PA and his medical degree from the State University of New York Downstate Medical Center in Brooklyn, NY. He completed his internship, residency and a research fellowship at Peter Bent Brigham Hospital in Boston, MA. He was honored for his military service in Vietnam with a Bronze Star.

He serves on the Board of Directors for the American Society of Clinical Oncology Foundation and for the Cancer and Leukemia Group B (CALGB) Cooperative Group, and on the editorial boards of several publications including *Oncology*, *The Breast Journal*, and *CURE*. ●

faculty *Profile*

The son of a physician and a nurse, H.J. Kim admired his South Korean father's profession. So after graduating from Dartmouth College in 1988, he enrolled in the University of Virginia's Medical School. A month later, his father was diagnosed with non-Hodgkin's lymphoma, requiring surgery. "After that, oncology was a logical interest of mine," he says.

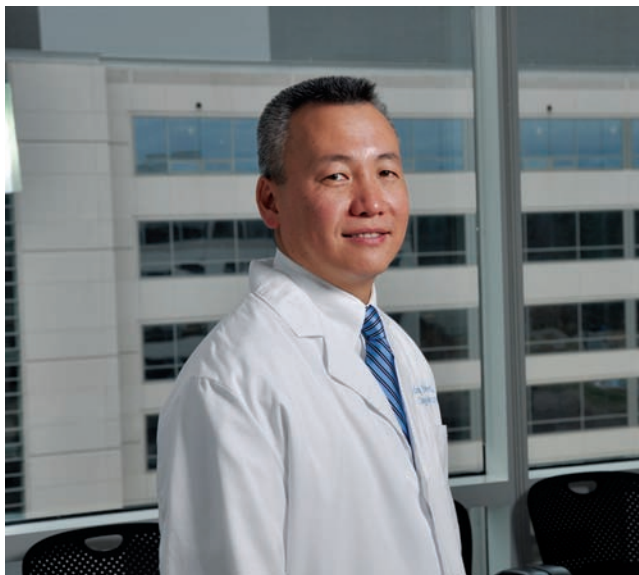
Kim wanted a combined career in surgery and research, and finding a home to practice both was not that easy. "I struggled at several other big-name institutions to find suitable research mentors but could have easily picked several here at UNC," he says. Kim trained at several medical centers, completing his residency at the University of Chicago, a research fellowship at the University of Texas Medical Branch in Galveston, and a fellowship in surgical oncology at Memorial Sloan-Kettering before coming to UNC.

Research and Surgery

In addition to his surgical schedule, Kim is involved in several research projects. He and Carol Otey, associate professor of cell and molecular physiology at the School of Medicine, are investigating what causes breast and pancreatic cancers to metastasize.

Kim also is collaborating with Al Baldwin, William R. Kenan, Jr. Distinguished Professor of biology and associate director at Lineberger, to understand why sarcomas and gastrointestinal cancers are resistant to chemotherapy.

"The outcome of research is less certain than the immediate, tangible results of surgery. I am fortunate to have very established mentors who are well-recognized for their work," Kim says. "It's those



relationships that provide confirmation of why I remain at a university center: the opportunity to change cancer care in the long run."

On top of all that, Kim leads colleagues in the Division of Surgical Oncology to create a program that will train future surgeons in the surgical management of malignant diseases. Programs like this are essential to keeping doctors in surgical oncology, especially with a shortage expected in coming years because of an aging population demanding more procedures.

Work/Life Balance

"What I do love about UNC is that the people here understand family is important. The surgical oncology division works really hard and we are surprisingly all married and have well-adjusted families, which is quite rare," he boasts.

Kim maintains his busy schedule while helping his wife Dana, a nurse practitioner, raise their young children Kristina, 9, Jessica, 7, and Charlie, 5. They're a close bunch who love the outdoors, the beach - or being homebodies.

"If it was up to me," Kim laughs, "I'd like nothing better than to vegetate in front of the TV with a Slim Jim and a Mountain Dew." ●

Dr. H.J. Kim pursued a career in surgical oncology after his father was diagnosed with non-Hodgkin's lymphoma

research *Briefs*

Long-term use of nutrient supplements may increase cancer risk

A new study shows that certain people - especially smokers - who took dietary supplements containing beta carotene, retinol, vitamin A, lycopene and lutein are at higher risk of developing lung cancer than the general population. Specifically, the study found that use of retinol and lutein supplements for four years or longer was associated with increases in lung cancer risk of 53 percent and 102 percent, respectively. "The amount of time the person took supplements seemed to have a greater effect than the dose," said Jessie Satia, PhD, MPH, associate professor of epidemiology and nutrition at the UNC Gillings School of Global Public Health and UNC Lineberger member. Even a modest dose, if taken for a long time, can increase the risks of lung cancer, especially among smokers."

New genomic test may guide breast cancer treatment choices

One in eight women in the United States will receive a diagnosis of breast cancer in her lifetime. But by specifically measuring the activity level of a small subset of the 20,000 plus genes that may be

turned on or off in each tumor, a new genomic test can give patients a more accurate picture of how their disease might progress. "Based on the genomics of a tumor, we can

make good predictions about how a patient might do, but we can also define predictive markers that tell us which drugs to give patients," said study co-author Charles Perou, PhD, associate professor of genetics and pathology and a UNC Lineberger member. "We've demonstrated that this test can predict the likelihood a patient will relapse and can define the biologic subtype of their tumor - pieces of information that together could be used to make treatment decisions."

New approaches may prevent transplant rejection

To prevent the rejection of newly transplanted organs and cells, patients must take medicines that weaken their entire immune systems, increasing susceptibility to life-threatening infections. But researchers at UNC Lineberger have discovered a subset of cells called TH17 that seems to trigger the immune system to attack transplanted cells in the first place. "Our hope is that uncovering the mechanisms that cause graft-versus-host disease will allow for treatments that specifically target its causes and do not have the harmful side effects of traditional immunosuppressive therapy," said study lead author Jonathan Serody, MD, a UNC Lineberger

member and the Elizabeth Thomas Professor of Medicine, Microbiology and Immunology. Research on the TH17 branch has already sparked the interest of some pharmaceutical companies such as Wyeth, and Serody predicts that there will be a number of drugs coming out in the next five years to treat immune-based skin diseases.

Circadian clock changes can suppress cancer growth

Disruption of the circadian clock - the internal time-keeping mechanism that keeps the body running on a 24-hour cycle - can slow the progression of cancer. UNC researchers found that genetically altering one of four essential "clock" genes actually suppressed cancer growth in a mouse model commonly used to investigate cancer. "Our study indicates that interfering with the function of these clock genes in cancer tissue may be an effective way to kill cancer cells and could be a way to improve upon traditional chemotherapy," said senior study author Aziz Sanjar, MD, PhD, a UNC Lineberger member and Sarah Graham Kenan Professor of Biochemistry and Biophysics in the School of Medicine. "These results suggest that altering the function of this clock gene, at least in the 50 percent of human cancers associated with p53 mutations, may slow the progression of cancer. In combination with other approaches to cancer treatment, this method may one day be used to increase the success rate of remission." ●

Program SPEEDs Research to Patients

The University of North Carolina's mission is to serve the entire state. A new program aims to increase the University's reach by "bringing more of what we know works to prevent and treat cancer to more people, in more places, in less



Cathy Melvin points out NC SPEED sites to Senator Joe Sam Queen during a legislative tour of the NC Cancer Hospital.

time," explains Cathy Melvin, PhD, director of the dissemination core facility at UNC Lineberger and research associate professor of maternal and child health in the UNC Gillings School of Global Public Health. "We want to make sure that people in every region, and eventually every county, can be actively engaged in efforts to apply proven strategies for more quickly implementing evidence-based interventions and achieving excellence in health and healthcare research and practice."

The result is NC SPEED (Statewide Push for Excellence, Engagement and Delivery), a network of research associates coordinated and directed by UNC Lineberger faculty.

Studies show that it takes an average of 17 years to implement clinical research results in daily practice.

"Given the pace of discovery in many areas of cancer prevention and control, 17 years is just too long to wait for patients to benefit from these new discoveries," Melvin says. "Actively

disseminating what we know works, building capacity within systems to adapt and implement these approaches, and providing support to health care providers and systems is critical to speeding up this process."

Through the program, research associates are currently at work in the Asheville, Greenville and Wilmington areas on:

- Implementing smoking cessation approaches for pregnant women and parents
- Social marketing to increase the numbers of young women receiving the HPV vaccine
- Helping to evaluate basic prevention programs to help reduce obesity, increase physical activity, improve nutrition and quit smoking - all factors in the development of cancer
- Testing the feasibility of reaching African American men in barbershops with messages and tools to increase their physical activity
- Improving systems for colorectal and breast cancer screening and follow-up among uninsured and minority populations

NC SPEED research associates help link individuals and organizations in North Carolina communities and healthcare systems with UNC and Lineberger researchers so that both groups can learn from each other.

"These linkages help us to work together more quickly and efficiently to implement proven interventions and improve systems," Melvin explains. "When we work together, we can accomplish more than we can alone, and we can do it faster. We hope that NC SPEED can help make North Carolina the state that experiences the greatest improvements in cancer outcomes over the next decade." ●

Outcomes Research

continued from page 1

understanding of patient preferences, this knowledge can also help inform treatment decisions that are best and meet the needs and preferences of each individual patient."

Carpenter and Richard Goldberg, MD, associate director of UNC Lineberger and physician-in-chief of the NC Cancer Hospital, are investigating colorectal cancer treatment outcomes, in which treatment may involve surgery and different types of chemotherapy. Information from several treatment outcomes studies for colorectal and other cancers has documented various side effects, and can sometimes help patients choose the treatment that avoids the side effects that matter most to them. "These same outcomes studies have informed the development of new technologies and treatment techniques. For example intensity-modulated radiation therapy and nerve-sparing prostatectomy are prostate cancer treatment options that are more precise and typically have fewer side-effects than the prior generation of treatments," Carpenter explains.

Til Stürmer, MD, associate professor of epidemiology at the UNC Gillings School of Global Public Health and director of the UNC-GSK Center of Excellence in Pharmacoepidemiology and Public Health, studies drug benefits and drawbacks across the population. He is currently focusing on developing new methods to increase validity of non-experimental treatment comparisons and the role of certain pain medications on the occurrence of colorectal cancer. "Any knowledge about the causes of cancer will increase our potential to reduce the incidence of cancer through changes in lifestyle and screening," he says.

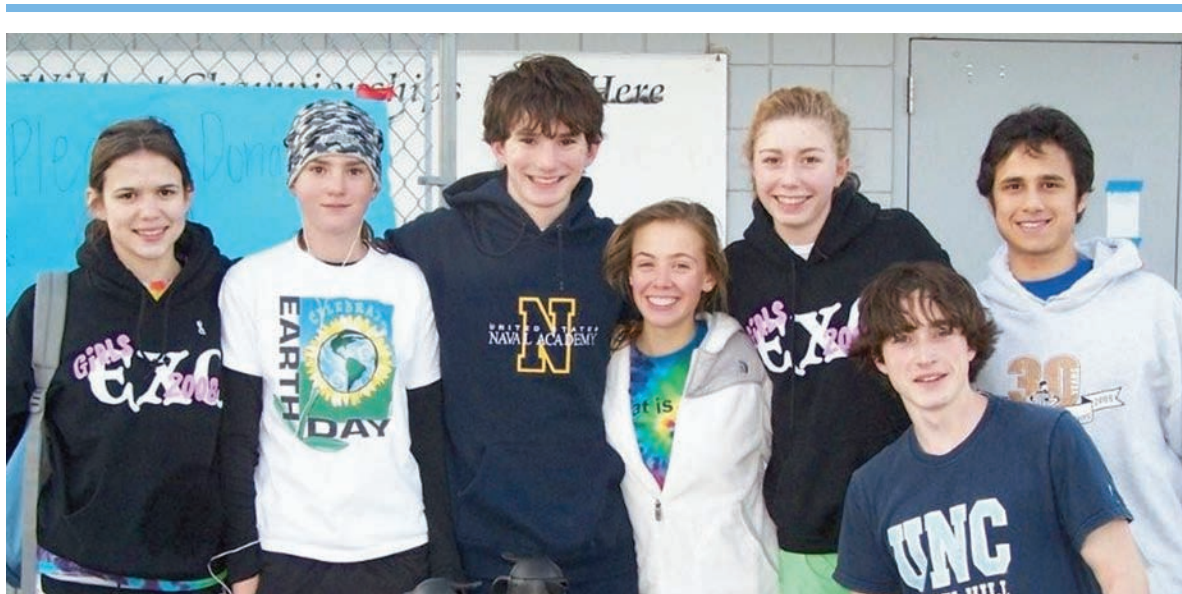
And, Carpenter adds, "It allows us to develop information to help inform treatment decisions for patients and to help inform the next generation of research." ●

Jim Bear Named Howard Hughes Medical Institute Early Career Scientist

James Bear, PhD, associate professor of cell and developmental biology in the UNC School of Medicine, has been selected as one of only 50 researchers in the United States to receive a Howard Hughes Medical Institute Early Career Scientist Award.

The institute's Early Career Scientist awards identify the nation's best biomedical scientists at a critical early stage of their faculty careers, and provide them with flexible funding to develop scientific programs of exceptional merit. Bear, a member of UNC Lineberger, will receive a six-year grant to fund his research into proteins associated with cell motility and melanoma.

Bear came to UNC in 2003 following a postdoctoral fellowship at MIT. He earned his undergraduate degree in Biology from Davidson College in Davidson, NC, and his doctoral degree in Cell & Developmental Biology from Emory University. ●



Lap-A-Thon supports lung cancer research

A Lap-A-Thon, sponsored by East Chapel Hill High School's Cross Country Team, held January 30 at the school's track, attracted 200 walkers, jogger and runners, and raised \$5,000 for lung cancer research at UNC Lineberger. The event was led by Sam Marks, cross country team co-captain, Coach Steve Marquis, and Elsbeth Grant, co-captain. "We organized this event to show support for our teammate and friend, David Calderon-Guthe, who recently lost his mother, Rebecca Calderon, to lung cancer and to give others a chance to support those still battling their disease," explained Sam Marks. Photo caption: L-R: Elsbeth Grant, Klara Calderon-Guthe, David Calderon-Guthe, Alison Smith, Claire Gildard, Elliot Schwartz, and Sam Marks.

Video Games Help Patients Sit Still for Treatment, Move for Therapy

In the new NC Cancer Hospital, the aim is to provide enhanced amenities to promote patient care and recovery. To do that, we are setting up a special fund to purchase video gaming systems for pediatric cancer patients and bone marrow transplant patients.

Twelve Play Station 3 systems for the new, greatly expanded Pediatric Hematology/Oncology Clinic are needed. The children are often confined to a bed or chair during their chemotherapy treatment, which can take several hours. During this time, game systems are used for therapeutic distraction to keep the patient in one spot for a long duration.

Sixteen Wii game systems for the Bone Marrow Transplant unit are needed, one for each of the BMT inpatient beds in the new hospital. Patients receiving a bone marrow transplant remain on extreme isolation precautions for several weeks due to the danger of infection. During the bone marrow transplant process, it is extremely important that patients remain as active as possible



to prevent deconditioning and other secondary complications from prolonged bed rest and isolation. Because of the side effects experienced during treatment, patients are often not able or do not feel like participating in traditional exercise (for instance, riding the exercise bike and/or walking on the treadmill).

The Wii is a perfect solution and helps to motivate numerous patients to willingly get up out of bed and participate in an activity that helps them maintain their functional abilities during treatment.

If you are interested in helping with this project for the NC Cancer Hospital, please send your contribution to UNC

Lineberger at CB #7295 and include a note directing it for the purchase of a NCCH Game system. Wii game systems cost \$330 with the Wii fit add-on modules, and Play Station 3 systems cost around \$400. If you would prefer to purchase a new system yourself and donate it to the hospital, please contact Eli Jordfald at (919) 966-5905 for drop off information. ●

de Graffenreid Named Director of Communications and Marketing

Ellen de Graffenreid has been hired to the newly created position of director of communications and marketing at UNC Lineberger Comprehensive Cancer Center.

Ellen returns to Chapel Hill, the site of her post-graduate education, after which she had more than a decade of marketing communications experience in technology and higher education. Most recently, de Graffenreid was at the University of Louisville (UofL) Health Sciences Center, where she directed marketing and public relations for the schools of medicine, dentistry, nursing and public health and information sciences as well as more than 17 Centers and Institutes, including the James Graham Brown Cancer Center.

de Graffenreid earned her undergraduate degree from Indiana University and a MBA and a Master of Arts from UNC. ●



Honoring Mary Anne Long's Bright Spirit

Mary Anne Long was born and raised in Durham, NC, graduated from UNC in 1972 and was an avid Tar Heel men's basketball fan! She was diagnosed in 2005 with stage IV colorectal cancer. Amazingly, she didn't let cancer stand in the way, and she continued to travel to support the team she loved so dearly.



Mary Anne bravely fought her disease for four years and somehow always managed to keep a bright smile on her face. The battle was a difficult one with many different courses of treatment along the way. Her husband, Rodney, says that

her most challenging moment came when she lost clumps of hair after beginning a harsh round of chemotherapy. She could deal with almost anything, but her hair loss was truly heartbreaking.

This past Christmas Rodney and their two daughters, Corie and Macey, wanted to surprise her with a very unique and special gift that would raise her spirits while impacting others. They decided to make a very generous donation to the NC Cancer Hospital to name the Brighter Image Boutique in honor of their courageous mother and loving wife. Mary Anne was overwhelmed with joy. She knew this boutique would provide skills and techniques to women undergoing cancer treatment, offsetting some of the physical and appearance-related side effects of treatment. Cancer patients would now benefit

from tips on skincare, makeup, hair styling and even wigs - all free of charge.

Mary Anne lost her battle on March 3, 2009 at the age of 58. Never once did she give up fighting and she will always be remembered for her fun-loving, vivacious personality. Because Mary Anne's spirit inspired and touched so many, more than 130 individuals have decided to honor her memory by contributing over \$14,500 to The Mary Anne Long Brighter Image Boutique. Her family is truly honored to know that so many have contributed and the shelves will be full when the doors of the new hospital open in September. ●



1st Annual Fashion Cares Event

Uniquities of Chapel Hill, NC held its first annual Fashion Cares event on April 1 to benefit UNC Lineberger, raising over \$1,100. Models, all who had been touched by cancer in some way, walked the runway to show the latest styles to the crowd. West End Wine Bar provided the venue and beverages and Elaine's on Franklin provided food. Pictured above are West End Wine Bar owner Jared Resnick with Uniquities owner Julie Jennings.

Triad Golfers Against Cancer Fund Pharmacologic Research at UNC Lineberger

Triad Golfers Against Cancer have awarded \$56,000 to Howard McLeod, PharmD, director of the UNC Institute for Pharmacogenomics and Individualized Therapy (IPIT). McLeod will use the funds to conduct genetic analysis of the ability of anticancer drugs to kill cancer cells. His co-investigators include Richard Goldberg, MD, associate director of UNC Lineberger and physician in chief of the new North Carolina Cancer Hospital; and Alison Motsinger, PhD and Kristy Richards, MD, PhD, with IPIT.

"Although we have a number of drugs to treat cancer, we don't know which specific drug will give the greatest help to an individual patient. This study will help us discover the genes influencing how cancer drugs work and identify ways of selecting the best medication for each patient," said McLeod.

Golfers Against Cancer, founded in 1997, is a national charitable organization that has raised over \$10 million to fund cancer research. Triad GAC has raised over \$1.5 million for research at North Carolina universities. Since 2006, they have funded research projects at UNC Lineberger totaling \$335,000. ●

volunteer *Spotlight*

Chapel Hill's Suzie Havens calls the Beach Ball "a fun, casual and very relaxed party - it feels like just about everyone in Chapel Hill is there!" The five-year volunteer and three-year co-chair loves the inclusive nature of the event and the range of people who attend.

"Of course I love the event itself - it's a GREAT party, but even better - you can feel good about attending because you know that you are also helping raise the funds that will go to research, treatment and prevention programs," she says.

Havens volunteers alongside her mother, Bev Foster, and sister, Deb Shah. She calls the Beach Ball a team effort - noting the support of her husband, realtor Kevin Cohan, and even her five year old daughter, Samantha. She credits "an absolutely fantastic volunteer committee" with making the event a success year after year.

The busy working mom fits in the Beach Ball activities around her job at GVA Advantis, where she has been employed for eight years. The same is true of

many of her fellow committee members. She says, "It's such a diverse group and every one of us has a story of what brought us to volunteer for UNC Lineberger, whether it's our own battle with cancer or that of a friend or loved one. There is a common bond that drives us all. I love being a part of that!!!"

Havens was treated for breast cancer at UNC Lineberger more than eight years ago. She says, "I feel compelled to do whatever I can to help find a cure and to show my gratitude for my own survival, to honor those who have not been as fortunate, and for everyone out there who we can prevent ever having to go through this."

She admits that she cries every time she sees her UNC doctors because without them, she wouldn't be here. Her daughter, born after her radiation and chemotherapy, "calls it a 'happy cry,'" she adds.

"I want to see a cure for cancer in my lifetime, and I believe if we work hard enough at it - we will. It's why we are all there - we don't even need to talk about it," she says with a smile! ●



Suzie Havens

Capps Endowment Supports Patients, Families

Steve Capps remembers his father, Allen, as "a quiet man, devoted to his family, with a quick wit and a willingness to help others." A native North Carolinian, Korean War veteran, husband and father, Allen Capps built his career in the construction industry.

Lung cancer became a part of his life in 2005. His first encounter at UNC Cancer Hospital was with Richard Feins, MD, and his colleagues and support team who treated the cancer with surgery. His care was then handled by medical oncologist Mark Socinski, MD, and his team, who oversaw various chemotherapy regimens in combination with radiation treatments under the care of Jan Halle, MD, and her radiation oncology team. Capps was eager to try novel treatments and therapies suggested by his care team, and he appreciated the collaborative approach they took in planning a customized treatment plan.



Jan and Steve Capps of Greensboro, NC

Steve says, "My parents were frequent travelers to Chapel Hill. When they arrived at UNC Hospitals, they were met by the warm and friendly people who work in the various fields in the hospital. It's hard to overstate the warmth, caring and compassion my parents found in their visits to Chapel Hill. Everyone played a part in making the atmosphere bright ... from volunteers pushing wheelchairs, to parking lot attendants, doctors, nurses and their assistants."

"My parents were fortunate. They had good health insurance, didn't live far from Chapel Hill and were retired allowing them the opportunity to focus their lives on my Dad's cancer treatment. This isn't the case for everyone. We encountered folks in waiting rooms and in casual conversation who struggled to make their periodic visits to Chapel Hill or cover the extra expenses that come along with having a family member with cancer," he adds.

"That's why we established the Allen and Julia Capps Endowed Fund for Patient and Family support: to help lessen the financial load for others in some small way."

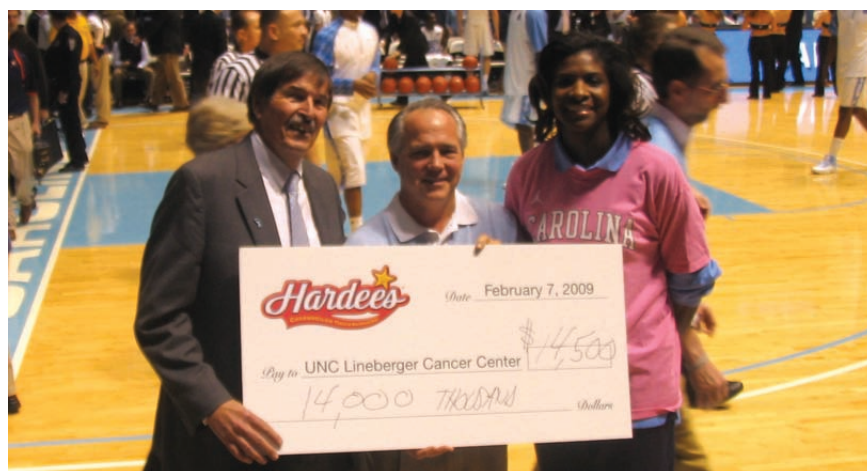
The Capps family is looking forward to seeing the NC Cancer Hospital open this fall. Steve notes, "We were able to tour the cancer hospital recently and knew that my Dad, as a construction man himself, would have loved the tour, the incredible attention to detail and the patient-centered focus."

"It was truly built with loving hands and fortunately for those of us in the great State of North Carolina, there are lots of loving hands to be found at the UNC Lineberger Comprehensive Cancer Center." ●



UNC Softball Team Aims to Strike Out Cancer

The UNC softball team held a "Strike Out Cancer" event in March when the Lady Tar Heels played host to the Michigan State Spartans. Both the Tar Heels and Spartans wore teal shirts to show ovarian cancer awareness. Former Tar Heel Jamie Shaver Mayberry, who has battled ovarian cancer, threw out the first pitch. The event raised over \$1,000 for ovarian cancer research at UNC Lineberger.



Hardee's® teams with Tar Heels to support UNC Lineberger

Hardee's® donated \$18,200 to the UNC Lineberger Comprehensive Cancer Center. The funds were raised in several ways: Hardee's has donated \$500 for each touchdown made by the Tar Heels football team at the Meineke Car Care Bowl, \$25 for every 3-point shot made by a UNC men's or women's basketball player at all regular season games, both home and away, and a Shoot Out Against Cancer in the Dean E. Smith Center when former UNC All-American and current women's assistant basketball coach Charlotte Smith, showed she had not lost her shooting touch and sank several shots to raise \$5000 of the total! Pictured (left to right): Shelley Earp, MD, Director, UNC Lineberger; Bill Boddie, President and CEO, Boddie-Noell Enterprises, Inc.; and Charlotte Smith. ●

Members of General Assembly Tour NC Cancer Hospital

Members of the NC General Assembly are touring the NC Cancer Hospital to get an early view of the new state-of-the-art facility. Greeted by UNC-Chapel Hill Chancellor Holden Thorp and UNC School of Medicine Dean Bill Roper, the legislators visited several key locales in the building that will improve the way cancer care is delivered at UNC and across North Carolina.

UNC School of Medicine
Dean Bill Roper and
UNC-Chapel Hill
Chancellor Holden
Thorp greet Senators
David Weinstein and
William Purcell.



UNC School of Medicine
Vice Dean Dr. Etta Pisano
discusses plans for the
Biomedical Research
Imaging Center (BRIC)
with Senator Eleanor
Kinnaird.

*** PLEASE SAVE THE DATES ***

CELEBRATE THE OPENING OF THE
NC CANCER HOSPITAL
AND THE BEGINNING OF A
NEW ERA
IN CANCER CARE.

Please save these special dates and join us when we open our doors to the people of North Carolina. All events are free and open to the public.

Dedication Ceremony: Tuesday, September 15th, 1 to 3 p.m.
Open House: Saturday, September 26th, 1 to 3 p.m.

calendar *of events*

JUNE 2009

13th Komen Race for the Cure, Raleigh, NC

JULY 2009

21st Regional UNC Lineberger Reception, Asheville

SEPTEMBER 2009

15th Dedication, NC Cancer Hospital, Chapel Hill

26th Open House, NC Cancer Hospital, Chapel Hill

OCTOBER 2009

28th Tickled Pink Luncheon, Kenan Stadium, Chapel Hill

29th Tickled Pink at Twilight, Kenan Stadium, Chapel Hill

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