

cancerlines



UNC
LINEBERGER



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25 years of seed grants spur excellence, funding *A catalyst for great ideas*

UNC Lineberger has helped the University of North Carolina at Chapel Hill become a top 10 institution for research funding. Despite flat budgets for the National Institutes of Health (NIH) and much more competition for those funds, this remarkable success over the last few years in the highly competitive grants process makes UNC one of the few institutions with funding going up.

“Among our critical success factors — in addition to the University Cancer Research Fund — are definitely seed grants funded by our generous donors,” says UNC Lineberger director Shelley Earp, MD. “They give our faculty an advantage in a landscape that is getting more competitive, by providing venture capital to gather vital preliminary data. This provides scientific justification underpinning new ideas and concepts. Investigators just can’t get funded without these kinds of data.”

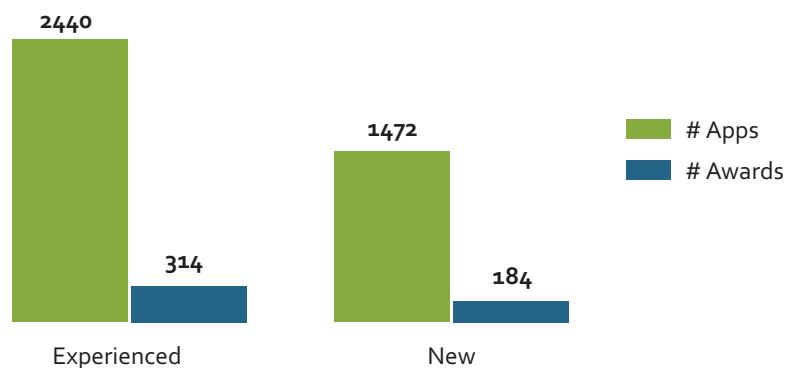
While the number of applicants for NIH grants has increased by 30 percent since 1998, the number of awards has remained the same. This has resulted in a highly competitive funding environment, meaning that this “venture capital” is almost required to help seed grant recipients leverage their projects into significant grants for further research.

Kim Rathmell, MD, PhD, is one such recipient. Her seed grant in 2008 study a biomarker of renal cell carcinoma. Her work has been recognized by the American Association for Cancer Research with their highly prestigious “Innovators Award,” as well as \$2.7 million in additional research funding.

She says it’s hard to overstate the impact of the seed grant, “It allowed us to branch out in a completely new direction. The data we gathered on gene expression in kidney cancer has completely shaped every project we work on. We identified a classification scheme to separate tumors into high and low risk groups that is now being developed as a highly valuable

biomarker for cancer decision-making. The results from studying gene expression in kidney cancers also led to our discovery of a novel subtype, which is likely to respond very differently to

2011 New National Cancer Institute Grants



National Cancer Institute Grants are highly competitive with only about 13 percent funded. Seed grants help UNC Lineberger scientists produce preliminary data that helps them compete for these scarce resources.

therapy, new insights into the underlying genomic changes that drive these gene expression changes, and greater insights into the biology of protein signaling in kidney cancer.”

“It would be nearly impossible to accurately quantify the number of papers and grants, or the number of students and postdocs heading into cancer research careers that these data have fostered. By supporting new concepts or the acquisition of highly valuable new data resources, these small grants have a major impact on the careers of investigators and the advancement of cancer knowledge,” Rathmell adds.

By the numbers

The UNC Lineberger seed grant program is primarily funded by private donors. In the 25 years since the program started,

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UNC oncology Nurse Practitioner program fuels workforce excellence



Angela Spruill, RN, ANP-BC, OCN, says the UNC School of Nursing’s advanced oncology nursing program helps her better partner with physicians

As our population ages, health care providers of all types are in demand. The number of Americans aged 65 and older is projected to double by 2030 and we expect to have 18 million cancer survivors by 2020.

In oncology, the shortage is particularly

acute. Increased numbers of people living longer with cancer, requiring ongoing care, contribute to a big demand for cancer specialists. A 2007 study by the American Society for Clinical Oncology (ASCO) projected that demand for patient visits in oncology will increase 48 percent by 2020. At the same time, there will be around 4,000 fewer oncologists than are needed to meet this demand.

As cancer care practices try to provide more outpatient treatment, extended hours, and other programs to help patients, providers are stretched thin. That’s where a growing program at the UNC School of Nursing comes in.

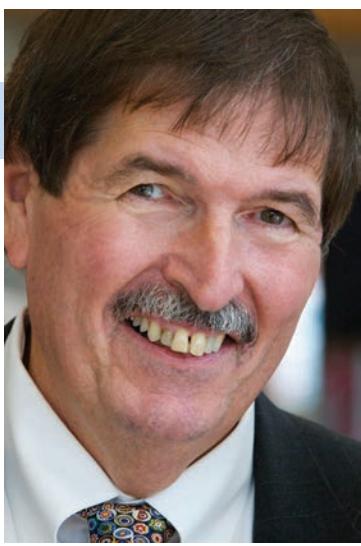
ASCO’s Workforce Advisory Group identified the increased use of non-physician practitioners in oncology practices as a

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UNC
CANCER CARE

the inside line up



director's message

Wow, what a fall season! We are overflowing with great news.

On the heels of our last issue of *Cancer Lines*, highlighting the Cancer Genome

Atlas Grant, **Chuck Perou, PhD**, put on a tie and put his best foot forward with a story on the front page of the *New York Times*, an appearance on CBS News, and interviews with National Public Radio's All Things Considered. The work that he, **Neil Hayes, MD, MPH**, and **Katherine Hoadley, PhD**, led for this nationally-recognized project has been called the "moon shot" equivalent in breast cancer research.

They're just part of the outstanding breast cancer research team at UNC, which recently received a competitive renewal for our National Cancer Institute SPOR (Special Programs of Research Excellence) grant that will bring more than \$10 million to UNC over the next 5 years. To put the icing on the cake, our own **Hy Muss, MD**, is the recipient of the prestigious Susan G. Komen for the Cure® Brinker Award for Scientific Distinction in Clinical Research for his critical contributions to the treatment of breast

cancer, particularly in older women.

On a sad note, our Breast Cancer program lost one of its true pioneers, Bob Millikan. Bob's passion for understanding breast cancer and the disparities in outcomes for African-American women made him one of the country's best known and beloved researchers (see the story on page 3).

While recently the news spotlight has been on breast cancer, last month we Turned the Town Pink to raise funds for all cancer patients and our outstanding Comprehensive Cancer Support Program. From support for single fathers due to cancer and a groundbreaking research project (www.singlefathersduetocancer.org) to support for cancer caregivers and the outstanding staff at the Patient and Family Resource Center who are serving around 50 people a day — about 15000 each year — the community support for these services helps us make life a little easier for cancer patients and their families.

This caring spirit and passion for making cancer treatment better truly extends to everyone at UNC Lineberger. A few weeks ago I had the privilege of attending the international meeting of the Society for Translational Oncology, which we co-hosted in Chapel Hill. This organization focuses on research to practice — exactly what we excel at here at the cancer center. Twenty-six of our outstanding faculty presented

their work in translational oncology, and their talks will be archived online for their peers to view. What struck me in listening to these presentations is the breadth and depth of UNC Lineberger's expertise across all types of cancer and all of the cancer care disciplines, from radiation, medical, pediatric and surgical oncology to survivorship, geriatric oncology and all points in between. We are making a difference through collaboration, innovation, and a spirit of doing what is right for the patient in the short term and the long term. It was an inspiring weekend.

You'll see some of that spirit of collaboration in the stories in this issue of *Cancer Lines*, with a celebration of 25 years of our seed grant program — a "game changing" effort funded by private support — to the School of Nursing's efforts to expand the cancer care workforce with highly skilled professionals, to some fantastic new faculty who we are pleased to welcome to Chapel Hill. If you are in the area and have the opportunity to meet some of the individuals and organizations who support UNC Lineberger, please thank them. We are humbled by the power of our donors, our community, and our dedicated faculty and staff. They make a difference for the future of cancer prevention, research, and care. As always, we couldn't do it without you. Thank you for your support. 8

Seed Grants Spur Excellence

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more than \$6.3 million has been raised, including the very successful Carolina Capstone Challenge in 2007, which raised more than \$2.6 million. Members of the Lineberger Board of Visitors has been instrumental in supporting this program over the years. Pearl and the late Sol Schechter of Kinston have supported the Seed Grant program every year since its establishment. There are currently 29 permanently endowed, named seed grant funds.

The program awards grants in two categories: Clinical/Translational Research and Population Sciences. Over the last 25 years, 269 awards have been made, totaling \$38 million. In the early years, awards ranged from \$2,500 to \$6,000. Now, thanks to private support, today's awards range from \$25,000 to \$50,000.

After five years, more than 90 percent of grants have at least more than one research product and many have multiple National Cancer Institute or National Institutes of Health R01 (individual investigator) grants.

Building for the future

Dr. Earp adds, "These awards can ensure that young, bright cancer researchers have the opportunity to establish a history of success, keeping them engaged in cancer research and building for the future."

Examples include Jen Jen Yeh, MD; Ian Davis, MD, PhD; and Carey Anders, MD. Dr. Yeh's 2006 pilot grant to study the RAS gene and genetic analysis in pancreatic cancers led to a \$1.2 million federal grant for pancreatic cancer research. Dr. Davis, who received a 2009 grant to understand the genetics of Ewing's Sarcoma, an aggressive disease that disproportionately strikes young people, leveraged his grant into a breakthrough publication and more than \$600,000 in competitive funding including a V Foundation for Cancer Research award in honor of UNC Alumnus and ESPN commentator Stuart Scott. Dr. Anders won a seed grant in 2010 to support her work focused on improving survival for women with breast cancer brain metastases. This year, she was named one of six 2012 Damon Runyon Clinical Investigators in the country, a highly prestigious and competitive award for young scientists, which comes with a three-year, \$450,000 grant to further her research.

"These award recipients hail from different departments and disciplines. Jen Jen Yeh is a surgical oncologist, Ian Davis is a pediatric oncologist and Carey Anders is a member of our Breast Center. What is fantastic about the Seed Grant program is that it takes full advantage of one of our greatest strengths — our multidisciplinary



Seed grant recipients Ian Davis, MD, PhD, Nancy Thomas, MD, PhD, and Clara Lee, MD (far right) with seed grant donors and advocates Bob and Penny Barnhill and Shelley Earp, MD (center) at the September 21st meeting of the UNC Lineberger Board of Visitors.

depth," Dr. Earp notes.

"These are significant — and highly competitive — awards for our faculty researchers," notes Dr. Earp. "A scientific advisory board reviews the applications and we always have far more outstanding ideas than we can fund. About a quarter of applications make the cut."

A rewarding way to give back

Bob and Penny Barnhill of Tarboro, members of the UNC Lineberger Board of Visitors, say this is one reason why they have supported the seed grant program for many years.

"The success of a single seed grant often generates funding many times over. We have been so impressed by the researchers that have been supported through the seed grant program and the success that they have had," Bob notes.

"Our family supports this program for two reasons — to help foster exciting early cancer research and to help UNC Lineberger retain good researchers whose work will ultimately make a difference." 8

New research points to lung cancer screening benefits for high-risk patients

Part three of a series exploring current issues in cancer screening with some of UNC Lineberger's top experts

Robert Millikan, cancer researcher, gentle colleague, dies Oct. 7



A brilliant and beloved scientist has left us too early. Dr. Robert Millikan, Barbara Sorenson Hulka Distinguished Professor of

Cancer Epidemiology, died Sunday, October 7. He was 55.

A member of the epidemiology faculty at UNC Gillings School of Global Public Health and of UNC Lineberger Comprehensive Cancer Center since 1993, Dr. Millikan's research in cancer epidemiology brought hope for better understanding and treatment of breast cancer, particularly for young African-American women who disproportionately die from the disease.

"Dr. Millikan had a major impact on the field of cancer and molecular epidemiology," said Andy Olshan, PhD, professor and chair of the epidemiology department and UNC Lineberger's associate director of population sciences. "His innovations led the field and created opportunities for countless epidemiology and other public health students. The department has lost not only a great scientist and teacher but a wonderful friend and colleague."

"Dr. Millikan and his colleagues conducted three waves of this country's groundbreaking longitudinal study of breast cancer in African-American and Caucasian women," said Shelley Earp, MD, director of UNC Lineberger. "Through the Carolina Breast Cancer Study (CBCS), he sought to understand the complex reasons for poor breast cancer outcomes in African-American women. His seminal findings, published in 100 papers, have changed the face of breast cancer disparities research. The CBCS Phase III, which Dr. Millikan set in motion, will continue to add to our knowledge over the next decade, but the field has lost a brilliant and passionate advocate for women with breast cancer."

If you have a memory or thought about Dr. Millikan to share, please visit this site: <https://robertmillikanremembered.web.unc.edu/>

The family suggests memorial gifts to support the Carolina Breast Cancer Study in honor of his pioneering leadership in breast cancer research. Gifts can be made payable to UNC Lineberger Comprehensive Cancer Center, CB #7295, Chapel Hill, NC 27599-7295

While controversy surrounds screening guidelines for some forms of cancer, the scientific community's consensus on lung cancer screening was stable for years — screening had more potential harms than benefits. Now, new technologies and techniques have led researchers to believe testing can improve outcomes for some high risk patients.



A CT scanner, like this one at the UNC Health Care Spine and Imaging Center, can be used to screen for lung cancer in high-risk individuals while delivering a very small dose of radiation.

Lung cancer is the number one cause of cancer death. It is estimated that 160,340 people will die of the disease in the United States this year, more than 5,500 of whom are North Carolina residents.

One factor that leads to the high mortality is that the majority of lung cancer cases are not discovered until the disease is relatively advanced. More than 48 percent of new diagnoses occur when the cancer has already spread beyond the lungs. Since survival rates are far higher for patients diagnosed in the early stages of the disease, effective screening could significantly improve survival rates.

"The problem we have had is that the principles of good screening — catching the diagnosis early and doing no harm have been hard to reconcile," says Nirmal Veeramachaneni, MD, an associate professor of thoracic surgery at UNC, "Up until 2011 there were three large randomized controlled trials of screening that did catch lung cancer slightly earlier, but in the end there was no difference in mortality for these patients."

Physicians have a few methods of non-invasive screening for lung cancer such as sputum cytology and chest x-ray, but these methods have proven insufficient.

This risk/benefit calculation is beginning to change. An initial study by the National Cancer Institute (NCI) suggests that new technologies offer opportunities for non-invasive screening alternatives that result in measurable benefit. In 2011, researchers with the NCI National Lung Screening Trial published initial results showing a benefit of screening high risk populations using low-dose computed tomography (LDCT).

The study screened patients aged 55 to 74 years who had a history of smoking at least a pack a day for at least three decades. For these patients, screening with LDCT scanning reduced lung cancer specific mortality by 20 percent and mortality from all causes by 6.7 percent. An estimated 8 million Americans fit the criteria for this screening.

Dr. Veeramachaneni notes, "While this is a milestone

in showing a mortality benefit, the false positive rate is still very high and the absolute number of cancer cases detected is still very small. Doctors and patients have to be prepared for the consequences of CT screening. It's not a substitute for smoking cessation and we still don't have data on how long we should screen and how frequently we should screen."

Patricia Rivera, MD, associate professor of pulmonary and critical care medicine and a member of UNC's thoracic oncology program, has spent the last decade researching screening methods for early detection of lung cancer. She believes that technologies to detect lung cancer are improving, but the ability of the pathologist to make accurate diagnoses based on samples provided will play a critical role in improving screening results.

"We're developing technologies that allow us to do less invasive diagnostic procedures like endobronchial ultrasound. Lymph node biopsies allow us to take tiny little samples and make diagnoses, but it is very challenging for the pathologist to be able to say, 'This is an adenocarcinoma or this is a patient who has an adenocarcinoma with EGFR mutations. Very important information,'" said Rivera.

That's why many physicians recommend that patients seeking screening choose their facility carefully.

"You want your screening CT interpreted by a fellowship-trained, board certified thoracic radiologist," says Paul Molina, MD, FACR, professor of radiology at UNC. "That level of imaging expertise is a critical factor in being able to demonstrate the favorable risk-benefit ratio of the New England Journal of Medicine study."

Who should get low-dose CT screening for lung cancer?

Any patient thinking about being screened should consult with their physician so they are fully informed about potential risks and benefits.

Either patients who are:

- 55 to 74 years old
- 30 pack-years* or more smoking history (equivalent to 1 pack a day for 30 years, or ½ pack a day for 60 years or 2 packs a day for 15 years)
- Current smokers or quit less than 15 years ago

OR

- Age 50 or older
- 20 pack-years* or more smoking history (equivalent to 1 pack a day for 20 years, or ½ pack a day for 40 years or 2 packs a day for 10 years)
- Have one additional risk factor:
 - o Exposure to radon, asbestos, silica or other carcinogen
 - o Personal history of lymphoma or other smoking-related cancer
 - o Family history of lung cancer



Hayes finds the physician-scientist role a rewarding path

Neil Hayes, MD, MPH, loves both parts of his job — even though they can be very different experiences day to day. Some days, he helps lead national teams of scientists reporting groundbreaking molecular analyses of cancers. Other days, he sees head and neck cancer patients at the N.C. Cancer Hospital.

A pragmatic physician/scientist, Dr. Hayes explains,

“In the lab, the first thing we try to do is identify problems that are relevant for large numbers of patients or problems for particular patients that look as though they might have a potential solution. The lab work is very informed by the relevance that I bring home from patient care every week.”

“I found myself connecting with the head and neck cancer patients. This cancer is challenging, and UNC has a great team led by Dr. Mark Weissler, one of my surgical mentors and a great doctor.”

Dr. Hayes is also involved in The Cancer Genome Atlas (TCGA), a scientific network funded by the

National Institutes of Health. Scientific teams, including UNC's, have recently reported new molecular analyses of several tumor types, including breast, lung and colon cancers. Their findings will shape current and future cancer therapy.

Hayes believes that one key to UNC's successful grant application to become part of TCGA was the University Cancer Research Fund. “UCRF is filling a critical niche for us at UNC. We've got great scientists, we've got great minds, but no matter how great your science is, there are very few opportunities to build infrastructure of science: the technology that allow us to ask questions with the newest tools.”

“There are not many ways to do that unless you have institutional support. One of the institutions we can turn to is the citizens of the state of North Carolina through our government. We've asked if cancer research important to North Carolina, and the citizens in our legislatures have said that cancer research is important for many reasons, and they've supported it. We feel a sacred trust to create a return on that investment.”

Dr. Hayes chose to join the UNC faculty in 2004. “I'm from North Carolina, so that was a draw. What's special about UNC is it's one of the few places where

you have everything you need in terms of working environment and facilities, and there is wiggle room for you to establish yourself in a niche and develop your own career. It's a really unique place.”

For Dr. Hayes “the best part of being a scientist is the people. Here at UNC, it's the leadership we have for the cancer center in clinical fields, the wonderful scientists across the country who we collaborate with, and our patients.”

And of his clinical practice, he says, “There are so many rewarding aspects of being a physician, but I certainly like the fact that at the end of the week I almost always feel like something that I did was relevant and made a difference to somebody, and that's very rewarding.”

Dr. Hayes is a Davidson graduate, a UNC School of Medicine graduate and completed a Masters in Public Health at Harvard University, an internship at Boston University School of Medicine, a clinical fellowship at Tufts University Medical Center and a postdoctoral fellowship at Dana-Farber Cancer Institute.

Dr. Hayes and his wife, Dr. Liza Makowski, an assistant professor of nutrition in the UNC Gillings School of Global Public Health and member of UNC Lineberger, have two sons and live in Chapel Hill. 

Faculty Updates



Van Le Named Palumbo Professor

Linda Van Le, MD, professor of gynecologic oncology and member of UNC Lineberger, has been appointed the Leonard Palumbo Distinguished Professor of Gynecologic Oncology. This professorship was established in 1986 in honor of Dr. Leonard Palumbo. Because of Dr. Palumbo's long standing commitment to gynecologic oncology it was the family's wish that this professorship be designated as a professorship in gynecologic oncology.

Dr. Wesley Fowler, Jr. held the professorship during his nearly forty years of dedicated service to the UNC Department of Obstetrics and Gynecology.

In 1991, Dr. Van Le started her fellowship at UNC under the direction of Dr. Fowler. She joined the faculty in 1993, rising to tenured professor in 2002. Dr. Van Le's research focuses on improving clinical care through implementing pivotal clinical trials. She is the principal investigator for the UNC Gynecologic Oncology Group grant, the subspecialty's multi-institutional collaborative group funded by the NCI; and is Director of Clinical Trials for UNC Gynecologic Oncology. She has over 80 peer-reviewed publications. She has been a leader in research to develop novel chemotherapeutics for ovarian cancer and to understand the impact of aging on ovarian cancer.



L-R: W. Kimryn Rathmell, MD, PhD; Yang Yang, PhD



Rathmell, Yang honored with Hettelman awards

Two UNC Lineberger faculty members were each awarded one of four Phillip and Ruth Hettelman Prizes for Artistic and Scholarly Achievement by Young Faculty. W. Kimryn Rathmell, MD, PhD, is an associate professor of medicine, Yang Yang, PhD, is an associate professor of sociology.

Dr. Rathmell's research spans the cancer genetic process, drug discovery,

biomarker development, functional tumor imaging analysis and therapeutic clinical

trials. Her lab has contributed to the understanding of renal cell cancer tumor biology and provides an outlet for translational studies that have led to changes how cancers are viewed in the clinical area.

Dr. Yang's research interests cross demography, medical sociology, cancer and quantitative methodology. She joined UNC two years ago with the support of the University Cancer Research Fund. Her goal is to better understand and find solutions to problems arising from interactions between individuals' social and physical worlds.

The Hettelman Prize, which carries a \$5000 stipend, recognizes the achievements of outstanding junior tenure-track faculty or recently tenured faculty. Phillip Hettelman, who was born in 1899 and grew up in Goldsboro, established the award in 1986. He earned a scholarship to UNC, went to New York and in 1938 founded Hettelman & Co., a Wall Street investment firm.

UNC Lineberger co-hosts Society for Translational Oncology

UNC Lineberger Board of Visitors members Marty Murphy, PhD, and Ann Murphy, PhD, Richard L. Schilsky, MD, Professor of Medicine and Section Chief of Hematology/



Oncology, Department of Medicine, University of Chicago, and Hy Muss, MD, celebrate Dr. Schilsky's recognition with the Society for Translational Oncology's Pinedo prize at the group's annual meeting, which was co-hosted by UNC Lineberger in Chapel Hill on October 20–21st and featured UNC Lineberger's top experts sharing their translational research expertise. Dr. Muss chaired the meeting. 



Olshan appointed Associate Director

Andrew F. Olshan, PhD, has been appointed Associate Director of Population Sciences at UNC Lineberger. This senior leadership position is responsible for overseeing the development of population-based cancer research and its integration throughout the Cancer Center programs. The position also oversees several Cancer Center core resources as well as two established scientific programs, Cancer Epidemiology and Cancer Prevention and Control. Dr. Olshan will continue to serve as head of the Cancer

Epidemiology Program and direct two cores, the Biospecimens Processing Facility and Rapid Case Ascertainment Core.

Dr. Olshan chairs the Department of Epidemiology at the UNC Gillings School of Global Public Health where he is a professor of epidemiology. He holds a joint appointment in the Department of Otolaryngology/Head and Neck Surgery at the UNC School of Medicine.

“Dr. Olshan is an outstanding, nationally-recognized cancer epidemiologist who has conducted ground breaking population-based studies in adult cancers as well as leading two large NCI-funded studies of childhood cancer,” said Dr. Shelley Earp, UNC Lineberger Director.

“In addition to his major role as chair of one of the country’s premier epidemiology departments, he has taken the time to fully interact with our prevention and control faculty who are experts in cancer outcomes, health communication, behavioral intervention and community-based participatory prevention research. In this capacity, he has earned the respect of population science faculty from across the university. He has played a particularly active role in developing our Integrated Cancer Information Surveillance Systems and collaborating with prevention faculty on HealthNC, as well as leading our interaction with the N.C. Central Cancer Registry. It is this public health research perspective that makes him an ideal leader for UNC Lineberger’s Population Science Program.”

Dr. Hy Muss to receive the Susan G. Komen® 2012 Brinker Award

Hyman B. Muss, MD, Professor of Medicine and the Director of the Geriatric Oncology Program at UNC Lineberger will receive the prestigious Susan G. Komen for the Cure® Brinker Award for Scientific Distinction in Clinical Research for his critical contributions to the treatment of breast cancer, in particular the treatment of breast cancer in older women.

The Brinker Awards for Scientific Distinction were established in 1992 to recognize the efforts of pioneers in two critically important areas of the fight to end breast cancer: clinical research and basic science. The roster of Komen Brinker Award laureates has grown to include names of researchers who have made the most significant advances in breast cancer research and medicine.



Dr. Muss will deliver a keynote lecture Dec. 5 at the 35th annual San Antonio Breast Cancer Symposium, a major international gathering of breast cancer researchers, clinicians, and patient advocacy organizations from around the world being held Dec. 4–8 in San Antonio, Texas.

research briefs



Genetically-engineered preclinical models predict pharmacodynamic response

A collaborative study in *The Oncologist* compares four different methodologies for pharmacokinetic and pharmacodynamic testing of the anti-melanoma agent carboplatin, demonstrating that genetically-engineered mouse models provide tumor delivery of drugs most comparable to the response seen in melanoma patients.

“These studies are critically important in the case of small-molecule cancer drugs, which often have systemic side effects and can be toxic at high concentrations,” said Ned Sharpless, MD, Wellcome Distinguished Professor of Cancer Research and study co-author.

The study was led by Bill Zamboni, PharmD and PhD, Associate Professor of Pharmacotherapy and Experimental Therapeutics at the UNC Eshelman School of Pharmacy and a member of UNC Lineberger Comprehensive Cancer Center, and Ned Sharpless, MD, who is also Associate Director for Translational Research at UNC Lineberger.

For more information, visit <http://unclineberger.org/news/genetically-engineered-preclinical-models>

Cancer gene family member functions key to cell adhesion and migration

A UNC-led team of scientists is the first to associate a member of the WTX gene family with cell adhesion and migration. Ben Major, PhD, and his research team found that WTX family member FAM123A interacts with a specific set of proteins that regulates cell adhesion and migration, processes essential to normal cell functioning and which, when mutated, contribute to human diseases such as cancer or Alzheimer’s.

The WTX gene is mutated in approximately 30 percent of Wilms tumors, a pediatric kidney cancer. While cancer researchers are learning more of WTX and how its loss contributes to cancer formation, virtually nothing is known of FAM123C or FAM123A, the latter of which is a highly abundant protein within neurons, cells that receive and send messages from the body to the brain and back to the body.

For more information, visit <http://unclineberger.org/news/cancer-gene-family-member-functions-key-to-cell-adhesion-and-migration>



Cell death mystery yields new suspect for cancer drug development

A mysterious form of cell death, coded in proteins and enzymes, led to a discovery by UNC researchers uncovering a prime suspect for new cancer drug development.

Leslie Parise, PhD, professor and chair of the department of biochemistry at the University of North Carolina at Chapel Hill, and colleagues found that the protein CIB1 is a master regulator of two pathways that cancer cells use to avoid normal mechanisms for programmed cell death. These two pathways, researchers believe, create “alternate routes” for cell survival and proliferation that may help cancer cells outsmart drug therapy. When one pathway is blocked, the other still sends signals downstream to cause cancer cell survival.

For more information, visit <http://unclineberger.org/news/cancer-drug-development>

volunteer profile

Julie Amos: Volunteering as a tribute

Julie Amos has done many things as a UNC Lineberger volunteer: climbed ladders at University Mall, transported a lifeguard chair, and served food from the kitchen at Squid's and the parking lot of her office, Coldwell Banker

Howard, Perry, and Walston Realty in Chapel Hill.

The realtor has worked with and chaired fundraising events including Tickled Pink, Beach Ball and most recently, a barbecue plate lunch as part of Turn the Town Pink.

"I started volunteering because my mother had recently died of lymphoma. I knew Missy Julian and that she had just gone through breast cancer so I wrote her a letter of support and then she asked me to become involved in Beach Ball, a fundraising dance party."

"I had done other volunteer work in the schools, but since my mother died when I was 30, I really wanted to do something so that other people might not lose their moms. It wasn't just volunteer work. It had meaning to it. I felt for the first time that I could do something to help increase cancer research and awareness."

Julie went on to help lead the 1994 Beach Ball when it was held at Uzzle Cadillac on Highway 15-501. "I remember bringing over an old wooden lifeguard chair from the Chapel Hill Country Club." She also worked with it when it was held at University Mall, climbing ladders to hang decorations. "Beach Ball was about building awareness of UNC Lineberger. Tickled Pink was a different event."

Julie began working with Tickled Pink and went on to chair some of the events. "When we started doing Tickled Pink, I began noticing more



survivors and getting connected to their stories. We saw more participants hosting tables in tribute to a friend or family member who was a cancer survivor."

Julie explains, "UNC Lineberger has wonderful volunteers, a great group of people that feels like family."

Now, as part of Turn the Town Pink, Julie has enlisted her office to organize a barbecue/fried chicken plate lunch fundraiser called Pig Out for the Cure that has raised over \$30,000. In its third year, the event was originally the idea of Julie and broker Randy Cox.

"Randy and I wanted to keep our office involved working with UNC Lineberger because our Real Estate agents had enjoyed waiting tables for the Tickled Pink luncheons, and we were focused on the idea that we wanted our office to make a difference in the community."

"The hardest part of any volunteer event is getting a lot of people to be on the same page with you. This event has been the easiest recruiting process. When I spoke at our office sales meeting and told them about everything the Comprehensive Cancer Support Program does to help patients and families, they were on board. People in our office have taken it very seriously, and I really admire them for their commitment. Volunteering is a team effort."

And for Julie, it's also personal. "My mother died on November 4 and so for us doing this event again this year, I felt like I'm doing something in tribute to her."

Debbie Dibbert, director of UNC Lineberger External Affairs, says, "Julie has been passionate about supporting Lineberger for eighteen years! She is a dream volunteer — always positive and enthusiastic, willing to try new things and get her hands dirty and always ready to do whatever it takes to make an event a success. Julie's hard work has directly resulted in thousands of dollars that has been available to support patients as they navigate the difficult cancer journey. I wish Lineberger could clone Julie!"

Welcome to New Faculty



Ethan Basch, MD, MSc Urologic Oncology and Outcomes Research

Ethan Basch, MD, MSc, has joined UNC Lineberger and the Division of Hematology/Oncology as Associate Professor of Medicine and Director of the Cancer Outcomes Research Program.

Dr. Basch comes to UNC from Memorial Sloan-Kettering Cancer Center in New York. He is a medical oncologist, the newest member of the National Cancer Institute Board of Scientific Advisors, and a nationally-recognized health

services researcher with expertise in patient-reported outcomes, clinical informatics, and drug regulatory policy. His research focuses on developing methods to better evaluate patient symptoms and adverse events as they proceed through therapy. The objectives of his work are to improve the quality and comprehensiveness of information available to patients and policy makers. This information can inform decisions from drug development to routine care delivery — towards improving people's experiences with illness and treatment, fostering patient-clinician communication, enhancing patient safety, and improving quality of care.

Dr. Basch leads an ongoing NCI initiative to develop a patient-reported adverse event monitoring system for use in clinical research (the "PRO-CTCAE"), and is study chair for multiple large trials employing patient-reported endpoints. He is co-chair of the Health Outcomes Committee of the Alliance for Clinical Trials in Oncology and is a federally appointed member of the Methodology Committee of the Patient-Centered Outcomes Research Institute (PCORI). He was recently appointed by the NCI Director to the NCI Board of Scientific Advisors.



Angela Smith, MD, Urologic Oncology

Angela Smith, MD, has joined UNC Lineberger and the Division of Urology as Assistant Professor of Medicine. She is a true Tar Heel, earning her BA and BSPH in Music Performance and Biostatistics at UNC-Chapel Hill, where she was a Johnston Scholar and elected to Phi Beta Kappa. She went on to earn her MD at UNC-Chapel Hill and then stayed to complete her internship in General Surgery and her residency in Urologic Surgery. She joined the faculty in July of this year. Dr. Smith was

UNC Urology Scholar of the Year for two years in a row and received a 2012 UNC Lineberger Clinical Fellows Award. She is actively involved in clinical research in kidney, prostate, and bladder cancers and is a member of the multidisciplinary urologic oncology program.

UNC Lineberger External Affairs Welcomes two new staff members



Elizabeth D. Green joined the UNC Lineberger team in early November in the role of major gifts officer. She will work with UNC Lineberger supporters, faculty and staff to enhance awareness of and private support for cancer prevention, research and treatment programs at UNC Lineberger and the N.C. Cancer Hospital.



William S. Davis joined the UNC Lineberger team in October in the role of manager of science communications. He will work with UNC Lineberger faculty and staff to enhance the cancer center's reputation and media relations program, with a particular emphasis on national science media relations.

Nurse Practitioners

continued from page 1

possible way to narrow the gap between supply and demand for oncology services. According to the group's 2007 study, 56 percent of oncologists work with nurse practitioners or physician's assistants. Those providers who collaborate with nurse practitioners and physician's assistants have higher visit rates than those who do not.

"We are recognizing that nurse practitioners are going to be essential to both meeting demand and to providing quality oncology care, so we are providing educational options to meet that need," says Deborah Mayer, PhD, RN, AOCN, FAAN, associate professor of nursing and a member of UNC Lineberger.

In the MSN program for adult nurse practitioners, the UNC School of Nursing offers an oncology option. Once completed, these advanced practice nurses can go on to a certificate program in oncology nursing that qualifies graduates to sit for the Oncology Nursing Certification (AOCNP) in addition to their adult nurse practitioner credential. Currently,

there are only a few programs in the US that offer an oncology focus for advanced practice nurses.

"We began the program in 2009 with two students and now have eight. More importantly, many of the Family and Adult NP students are taking one of the courses as an elective since they recognize that they too will be caring for cancer survivors."

"In addition to core courses in advanced oncology nursing and advanced oncology pharmacology, the students do their clinical rotations in oncology settings with a concurrent seminar where they review patient cases, participate in a journal club covering current issues, and read an autobiographical book by someone who has survived cancer. They complete an oncology-focused MSN research project as well," Mayer adds.

"We are very fortunate to have many nursing faculty who have interests in oncology who both teach and work with these students, including Lixin Song, Theresa Swift-Scanlan, Jennifer Leeman, Coretta Jenerette, Sheila Judge Santacrose, and Merle Mischel,"

Mayer notes, "We also have a wealth of experienced nurse practitioners in oncology who are great clinical preceptors to these students."

Recent program graduate Angela Spruill, RN, ANP-BC, OCN, is currently a staff nurse in UNC Cancer Care's bone marrow transplant unit. "I was in the program and working as an oncology staff nurse, and it was clear really quickly that the coursework gave me in-depth knowledge of the criteria that physicians use to select a therapy and manage side effects. The pharmacology course really helped me understand targeted therapies. Both make me a better partner for the physicians I work with," she says.

"With patients, the oncology focus has helped me become more comfortable having conversations about advance care planning, advanced directives and end of life decision making," she says.

"I am starting to interview for advanced practice positions and I think the degree with the oncology focus is helping me stand out in the pool of applicants." 8

philanthropy update

Turn The Town Pink

This October more than 50 local businesses, community groups and athletic teams Turned the Town Pink, a special, month long community-wide campaign, benefitting the Comprehensive Cancer Support Program (CCSP) at the NC Cancer Hospital. Every dollar raised during this campaign directly supports cancer patients and their loved ones by providing wigs and head coverings, nutritional counseling and supplements, support group and counseling sessions, massage and art therapy, educational pamphlets and materials, and assistance to patients experiencing economic distress.

Many local businesses supported Turn the Town Pink by selling decals throughout the month of October.



The Lorileis helped provide a musical send off for Pink Out Polk Place.



Above: The staff of the Aveda Institute in Chapel Hill turned out in pink!



Left: Mina's Hair Salon owners Louann Doran and Alejandra Scott with Dan Shannon, editor of Chapel Hill Magazine and the Weekly.



Corona Cares

Crown Imports and North Carolina's Corona beer distributors raised close to \$140,000 for the Comprehensive Cancer Support Program through a month long promotion throughout the state. Under the leadership of Rodney Long at Long Beverage, this promotion has raised over \$350,000 since it began in 2010!

A tribute to Ted Seagroves

A reception and golf tournament honoring Ted Seagroves, held at the Chapel Hill Country Club, raised more than \$50,000 to support pancreatic cancer research at UNC Lineberger.



Amy Seagroves Benton, Ted and Judi Seagroves

calendar of events

February

6th–7th 7th Annual UNC Conference on Melanoma
The Friday Center, Chapel Hill, N.C.

March

3rd 26th Annual Lineberger Club Luncheon
The Carolina Club at the George Watts Hill Alumni Center

April

20th Tar Heel 10-miler benefitting UNC Lineberger — Kenan Stadium
Look for registration information at
unclineberger.org/signature-events

29th and 30th UNC Lineberger Scientific Symposium:
The Tumor Microenvironment
The Friday Center
Chapel Hill, N.C.

September

27th UNC Lineberger Blue Ribbon Gala — Location TBA
Save the date for an exciting new signature event —
more details coming soon!

To purchase tickets or for more information about these events and other UNC Lineberger news, visit www.unclineberger.org, or follow us on [f](#) [t](#)



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George Karl, Coach Roy Williams, HJ Kim, MD,
and his son, Charlie

Fast Break

George Karl, former UNC basketball legend, current coach of the Denver Nuggets, and two-time cancer survivor, headlined the eighth annual Roy Williams' Fast Break Against Cancer at the Dean E. Smith Center on October 12. With a record crowd of 406 attendees, the popular breakfast raised \$162,000 for cancer research and prevention in our community. Special thanks to Atlantic Packaging, the presenting sponsor of the breakfast for the last six years and all our generous sponsors!



Rusty Carter, from presenting
sponsor Atlantic Packaging,
and Coach Roy Williams



Hunter and Nicole Burnette with daughters Ashley and Oliva at the race

Get Heeled 5K

On October 13, more than 900 people attended this one-of-a-kind family fun run, organized by the Pink Pacers, that raised almost \$40,000 for supportive care services in the Pediatric Oncology and Hematology Clinic at the N.C. Cancer Hospital. In three years, the Pink Pacers have raised over \$100,000 for UNC's Cancer Programs. *Photo by: Heba Salama Photography*