

Image Is Everything

NYU RESEARCHERS REFINE WAYS TO VISUALIZE CANCER



From left: Joseph Helpern, PhD, Radiology Chairman Robert Grossman, MD, Daniel Turnbull, PhD, and Elissa Kramer, MD, in front of NYU's high-field magnetic resonance imaging scanner, which permits studies not only of the body's anatomy, but of function as well.

The date was November 8, 1895. German scientist Wilhelm Conrad Roentgen was fiddling with a set of vacuum tubes and was surprised to find a flickering image cast by his instruments. Not knowing what the new rays were called, he dubbed them "X" rays. A week later, Roentgen generated the first X-ray picture of the human body: an image of his wife's hand, clearly delineating her bones and her wedding ring. The era of medical imaging was born.

More than a century later, radiologists and researchers at NYU continue to refine techniques to peer into the body's deepest recesses. In addition to standard X-rays, today's arsenal of imaging tools includes computed tomography (CT, in which a computer linked to an X-ray scanner is used to create digital "slices" of the body), magnetic resonance imaging (MRI, in which radio waves and a powerful magnet linked to a computer are employed to create images of the body with exquisite clarity), and positron emission tomography (PET, which visualizes cell metabolism by showing areas inside the body where glucose is taken up).

"Imaging has a profound effect on the diagnosis of cancer, as well as understanding how effective treatment is," says Robert Grossman, MD, Louis Marx Professor of Radiology, Chairman of the Department of Radiology, and Professor of Neurosurgery, Neurology, and Physiology and Neuroscience. Moreover, imaging techniques are being further enhanced to show

continued on p.6

IN THIS ISSUE

- 3 State-of-the-"Art" Health Care
- 4 Community Activities
- 5 Imaging and Clinical Trials
- 8 Late-Breaking News
- 9 Events Calendar

NYU Cancer Institute NEWS

NYU Cancer Institute Board of Directors

Norman Eig
Chairman
Roberta Greenberg
Kenneth G. Langone
Thomas Lee
Edward Minskoff
Shlomo Perl
Stanley Shopkorn
Sandra Meyer
Laura Perlmutter

NYU Cancer Institute

Steven J. Burakoff, MD
Director
Lauren E. Hackett
Executive Director for Administration

Deputy Director

William Carroll, MD

Associate Directors

Corinne Constantine
Research Administration
Max Costa, PhD
Environmental & Molecular Carcinogenesis
Silvia Formenti, MD
Clinical Research (Radiation Oncology)
Franco Muggia, MD
Clinical Research (Medical Oncology)
Angel Pellicer, MD
Shared Resources
Mark Philips, MD
Basic Research
Kristin Skinner, MD
Clinical Research (Surgical Oncology)
James L. Speyer, MD
Clinical and Hospital Operations
Anne Zeleniuch-Jacquotte, MD (Acting)
Cancer Epidemiology & Prevention

Community Outreach & Education

Claudia Ayash
Assistant Director
Danielle Iavarone
Coordinator, Special Events and Communications
Cody Weber
Program Associate

NYU Cancer Institute News Editorial Board

Claudia Ayash
Stephanie V. Blank, MD
Steven J. Burakoff, MD
Steven Gogel
Lauren Hackett
Howard Hochster, MD
Danielle Iavarone
Franco Muggia, MD
James Speyer, MD
Julia Smith, MD, PhD
Paolo Toniolo, MD
Cody Weber

Vice Dean & Vice President for Communications & Public Affairs, NYU Medical Center

Lynn D. Odell

Design

Tanya Krawciw

Contributing Writer

Rosie Foster

Photography

Claudia Ayash p. 4
Jeff Hackett p. 2
Danielle Iavarone p. 3
Rene Perez p. 1,7

NCI-designated Cancer Center

Message from the Director

They say a picture says a thousand words. Nowhere is that more evident than in the field of medical imaging, which has grown in leaps and bounds over the last decade alone.

For the patient with cancer, medical imaging is imperative. It is used to diagnose the disease. See how far it has spread. Monitor how well the patient is responding to treatment. And to catch it as early as possible, should it make a reappearance.

Here at the NYU Cancer Institute, we are fortunate to have one of the most sophisticated sets of imaging tools in the country at our disposal. In addition to standard X-ray, CT



scanning, and MRI, our radiologists are also blessed with advanced machines such as combination PET/CT and high-field MRI. With such equipment on hand, they are able to visualize cancer – and not just anatomy, but function as well – with more detail than ever before. Medical imaging at NYU is truly state-of-the-art.

And speaking of art – and another form of imaging – you can also read in this issue about the Artist-in-Residence Program. We know that surgery, chemotherapy, and radiation therapy are the conventional tools doctors use to treat patients. But things like paint, glue, and paper may also have a place, by helping patients express themselves creatively and

giving them a needed respite from the rigors of cancer treatment. The late Georgia O'Keefe once said, "I found I could say things with color and shapes that I couldn't say any other way – things I had no words for." Those who've benefited from the Artist-in-Residence Program would be inclined to agree.

Our Community Outreach and Education Program continues to educate the public by presenting provocative presentations that address cancer-related issues of relevance to all of us. You can read about some of the more recent events in the articles on page 4.

The gray days of winter are behind us, and the promise and renewal of spring are here at last. I wish you all good health.

Steven J. Burakoff, MD
Director, NYU Cancer Institute and Skirball Institute of Biomolecular Medicine
Laura and Isaac Perlmutter Professor
NYU School of Medicine



Artist-in-Residence
Mare Dianora gets back
from patients as much
as she gives.

State-of-the-“Art” Health Care

THE ARTIST-IN-RESIDENCE PROGRAM

On any given day, the fifth and sixth floors of the NYU Clinical Cancer Center, where many patients receive their treatments, buzz with their usual level of activity. But on Tuesday mornings, the soft sounds of brushes applying watercolor paints or scissors crunching paper gently drift through the waiting area.

That’s because Tuesday is the day when Mare Dianora, the NYU Cancer Institute’s Artist-in-Residence since April 2005, positions herself on one of these outpatient floors. Visitors to her post — which may include not just patients but their family members and friends — can participate in her latest endeavor: making a collage, assembling a holiday project, working with clay, or sketching with colored pencils. The possibilities are endless.

The program is so successful that some patients schedule their appointments for Tuesday mornings just so they can work with Ms. Dianora. Others come in to stretch their creative muscles on days when they don’t even have an appointment.

Sponsored by the Creative Center: Arts for People with Cancer and the NYU Medical Center Auxiliary, the Artist-in-Residence Pro-

gram engages patients to express themselves through art. Among other benefits, patients report relief from anxiety, distraction from pain or discomfort, respite from boredom, and enhanced communication with hospital staff. Workshops for staff members also help ease the stress associated with caring for people with cancer.

For Ms. Dianora, working with people who have cancer — as well as those taking the cancer journey with them — has taught her invaluable life lessons. It’s something she has done before, volunteering to work with people with cancer in Oregon as well as at a camp in New Jersey. “I’m reminded how pre-

By expressing themselves through art, patients report relief from anxiety, distraction from pain, and a respite from boredom.

vious every day is, and that feeling feeds back into my own work,” she notes.

As an “interdisciplinary artist,” her own choice of medium depends on what message she wants to convey. That could mean telling a story by making a book, or expressing herself through “mail art” — a movement characterized by the free exchange of art through the postal system. “My work investigates the nature of relationships to home, space, history, family, and community,” she explains.

As the Artist-in-Residence, Ms. Dianora cheerfully makes the two-hour commute from her home in Sag Harbor, Long Island to the NYU Clinical Cancer Center each Tuesday morning. By mid-afternoon, she gathers her supplies and moves over to Tisch Hospital to work bedside with people who are receiving cancer care as inpatients.

For people confined to a bed, creating or directing a work of art may have different benefits. “Being in the hospital can mean a loss of control,” Ms. Dianora says. “Sometimes I just let patients ‘boss’ me around. When I let them tell me what to draw, or simply where to hang a painting they’ve created, it gives them back some of that lost control.”

The experience is as enriching for the Artist-in-Residence as it is for the patients themselves. “I’m so gratified to see the transformation that patients go through,” she asserts. “One woman told me she couldn’t even write her name. I told her, ‘You do a little, I’ll do a little.’ She started to write her name, and when she realized she could do it, she wrote it over and over again until she filled a large sheet of paper. She was so pleased.”

“The introduction of any kind of art into the healthcare environment not only enriches that environment aesthetically, but also the people who are participating in the actual creation of the art — whether they’re making something, watching people make something, or looking at something that was made,” said Marianne Hardart, Assistant Director of the Therapeutic Recreation, Child Life & Creative Arts Therapies Department, who oversees the Artist-in-Residence Program at the NYU Cancer Institute with Claudia Ayash, Assistant Director of Community Outreach and Education. “It’s a very important element in people’s health care.” ■

Women's Cancer Education Series Tackles Tough Questions

Why do white women in the US have the highest risk of breast cancer in the world? How can cancer treatment impair fertility? And how should the public interpret science news? These were among the many questions addressed by the NYU Cancer Institute's Women's Cancer Education Series earlier this year.

In January, Paolo Toniolo, MD, Professor of Obstetrics and Gynecology and Environmental Medicine, discussed the first question at a lecture called *Breast Cancer and the Environment*. Although there is no single answer as to why white American women have such a high risk of breast cancer (a lifetime risk of nearly 15 percent, compared to less than 3 percent among women in Thailand), much of this risk may be attributed to lifestyle factors such as obesity, inadequate physical activity, alcohol use, and a Western diet.

In addition, hormones like estrogen play a role: bearing children earlier and having multiple pregnancies reduce risk. Dr. Toniolo concluded that breast cancer risk is affected by changes in hormones, which, in turn, are influenced by environmental (primarily dietary) and genetic factors.



From left: James Speyer, MD; Steven J. Burakoff, MD; Honorable William C. Thompson; Elizabeth Kaledin; Graciela Rogerio; Paul Shin; Stephanie S. Abrutyn; and Deborah Axelrod, MD

February's lecture, *Cancer and Fertility: What You Should Know About Fertility Preservation and Parenthood After Cancer*, was co-sponsored with Fertile Hope, a national organization dedicated to providing reproductive information, support, and hope to cancer patients whose medical treatments present the risk of infertility.

Some anticancer drugs, radiation therapy to the reproductive organs, and surgery that removes reproductive organs can all cause infertility. The event's panel – which included Lindsay Beck, Founder and Executive Director of Fertile Hope, Frederick Licciardi, MD, Associate Professor of Obstetrics

and Gynecology and Director of the Donor Oocyte Program, and Yelena Novik, MD, Assistant Professor of Medicine (Oncology) – reviewed factors that can affect fertility, as well as options for preserving it. Among those options are preservation of unfertilized eggs or fertilized embryos from women before cancer treatment begins (using traditional in vitro fertilization techniques), and banking of

sperm and testicular tissue for men.

But this is not a topic without controversy, noted Dr. Novik. For example, it is not yet known if the hormones used to stimulate egg production by the ovaries could fuel the growth of breast cancer, a disease influenced by hormone levels. "Each situation is unique and requires individual discussion between the patient, her oncologist, and a fertility specialist to weigh the pros and cons," asserted Dr. Novik. "Patients deserve all the information we can give them."

Last fall, Fertile Hope designated the NYU Cancer Institute as a Center of Excellence, one of only three cancer centers in

Increasing Awareness of the Third Most Common Cancer

"This is no joke, and it's not hemorrhoids." Not the words Linda Feldler, 59, was hoping to hear from a doctor in November 2004.

Subsequent tests showed that her fatigue and blood in her stool were caused by colon cancer that had already penetrated the intestinal wall. Today, after surgery and chemotherapy, she appears to be cancer-free.

Ms. Feldler is a walking testament to the importance of colon cancer screening, a point that was driven home by speakers at the NYU Cancer Institute's annual Colon Cancer Awareness Lunchtime Seminar in March. Had she begun screening starting at the recommended age of 50, the tumor might

have been found much sooner – possibly when it was a precancerous polyp – and she wouldn't have needed the treatment she endured.

Sadly, only 25 to 30 percent of Americans seek colon cancer screening. That screening includes sigmoidoscopy and colonoscopy (examination of the colon's inte-

rior using a flexible tube with a camera at its tip) and testing for blood in the stool. At the seminar, Roshini Rajapaksa, MD, Assistant Professor of Medicine (Gastroenterology), reviewed the pros and cons of these tools.

Michael Macari, MD, Associate Professor of Radiology, explained "virtual colonoscopy," which uses CT scanning to yield 3D images



The NYU Cancer Institute received a generous contribution from Team Continuum at this year's Colon Cancer Awareness Lunchtime Seminar. (See page 8 for more information.)

the country recognized for educating patients and healthcare professionals about the reproductive risks of cancer therapy; making referrals to appropriate fertility specialists; and, whenever possible, conducting research on cancer and fertility.

In March, *The Inside Scoop: Making Health News Work for You* addressed the vital role of the media in disseminating health information to the public. Speakers discussed how stories are developed on both the local and national levels, how consumers can best assess the information they are reading, and guidelines to support accurate reporting. A panel discussion followed.

“For most people, real science is what they read in the press,” said Deborah Axelrod, MD, Medical Director, Community Outreach and Education. “To bridge the gap between science and lay people, we assembled this panel of media experts to illustrate how news is communicated, and how the information is vetted to make it newsworthy.”

The panel included Elizabeth Kaledin, Correspondent, CBS Evening News; Graciela Rogério, Producer, WABC-TV; Paul Shin, MA, MS, Staff Writer, New York *Daily News*; and Stephanie S. Abrutyn, JD, Senior Counsel, Home Box Office, Inc. They were introduced by the Honorable William C. Thompson, Treasurer of the Judges And Lawyers Breast Cancer Alert, who co-sponsored the program. ■

of the inside of the colon. Although it cannot be used to remove polyps (like traditional colonoscopy), it offers promise as a screening tool for people who will not or cannot undergo conventional colonoscopy.

Peter Shamamian, MD, Associate Professor of Surgery, reviewed surgical approaches to colon cancer, including the expanding use of less invasive techniques. Howard Hochster, MD, Professor of Medicine (Oncology) and Pharmacology, discussed new chemotherapy regimens that combine conventional anticancer drugs with newer, targeted agents.

Nutritionist Elaine Everitt, MS, RD, advocated for making healthy lifestyle choices, and explained how smoking, daily alcohol use, obesity, and a high-fat, low-fiber diet can increase colon cancer risk. “You don’t have to be perfect to improve your health,” she said. “Even small changes can make a difference.” ■

www.nyu.edu

Rita J. and Stanley H. Kaplan Comprehensive Cancer Center

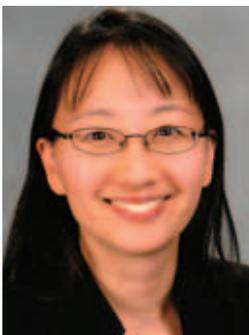
IMAGING AND CLINICAL TRIALS

Go Hand-in-Hand

Imaging tests are a vital part of the clinical trials process. These tools may be used to determine if a patient is eligible to enroll in a study. To see if a new drug can shrink a tumor, for example, the patient’s cancer must be deemed “measurable” on a scan.

Once a patient is involved in a trial, he or she often undergoes periodic scans throughout the study to see if the cancer is indeed responding to the investigational treatment. “Patients in clinical trials usually have imaging tests every three to six months, so we become active participants in their health care,” says Vivian Lee, MD, PhD, Professor and Vice-Chair of Radiology.

At the NYU Cancer Institute, patients’ doctors work closely with radiologists to ensure that this process runs smoothly, and science can often be advanced as a result of this collaboration. “The regular and ongoing dialogue with oncologists enables radiolo-



“Patients in clinical trials usually have imaging tests every three to six months, so we become active participants in their health care.”

VIVIAN LEE, MD, PhD

gists to understand cancer better, so we, in turn, can work with our imaging scientists to improve the technology used to diagnose and monitor the disease,” explains Dr. Lee.

That technology includes tests such as magnetic resonance spectroscopy, which detects biochemical differences between cancerous and noncancerous tissue and can be used to see what happens to a tumor in response to different therapies. This technique is currently being employed in several lines of research, including a clinical trial (NYU 04-64) using a 7-Tesla MRI system to see how the body takes up the drug gemcitabine in patients with advanced pancreatic cancer. (*For more on magnetic resonance spectroscopy and this clinical trial, see page 7.*)

Besides developing new tools to diagnose and evaluate cancer, NYU investigators are also establishing methods to measure changes in tumor size, focusing on tumor volume, not just diameter. “Many studies have shown that when tumors are very small, just eyeballing them to see if they’ve changed in size is not a very sensitive way to assess change,” says Dr. Lee. “Growth of a tumor from 1 mm to 2 mm may be imperceptible, but if detected, this change, in fact, reflects an eight-fold increase in the actual volume of cancer.” One example of research in this field is being conducted by Jane Ko, MD, Associate Professor of Radiology, who is enhancing the way CT can be used to determine tumor volume in patients with small lung nodules.

“Almost every clinical trial requires imaging,” concludes Dr. Lee. “We in Radiology feel privileged to be a part of this process.” ■

For information on clinical trials at the NYU Cancer Institute, contact the NYU Cancer Institute’s Clinical Trials Office at 212-263-6485.

“Imaging is so intimately related to cancer, and to our understanding of this disease. You can’t have one without the other.” ROBERT GROSSMAN, MD

not only what a tumor looks like, but how it is functioning, and in some cases to differentiate aggressive cancers from slower-growing tumors.

Doing Double-Duty to Study Cancer

X-rays, CT, MRI, and PET scanning have become firmly entrenched as the instruments of choice for imaging cancer. Radiologists are now combining these approaches to gain even more information about tumor size, spread, and aggressiveness. Thanks to a multiyear agreement with Siemens Medical Solutions USA, Inc., a new generation of imaging dynamos – including combination PET/CT and high-field

tion of the technology provides vital information about anatomy, including tumor size and shape, while the PET portion yields data about cell function. Patients receive an injection of a radioactive substance attached to glucose (a form of sugar). Since cancer cells take up (metabolize) more glucose than normal cells, areas of the body where cancer cells reside “light up” on a PET scan.

“By fusing images from these two technologies, we can get a highly accurate picture of how active a cancer is and where it is located,” explains Elissa Kramer, MD, Professor of Radiology and Chief of Nuclear Medicine. Such information is leading to an earlier diagnosis of cancer recurrence, reducing the need for biopsies, improving the staging of lung cancer and lymphoma, and revealing tumors that, on other scans, may have been obscured by scarring from prior surgery or radiation therapy.

Like any test, however, PET has its limitations. It has not been as valuable for imaging brain tumors. Because the basal level of metabolism in the brain is very high, the difference in metabolic levels between normal and cancer cells is not as great as it is in the rest of the body. That’s where magnetic resonance spectroscopic imaging (MRSI) comes in – a special application of MRI that allows researchers to measure tissue metabolism.

The whole-body 7-Tesla MRI scanner acquired as part of the Siemens agreement – one of only a few in the country – is more than four times as powerful as conventional 1.5 Tesla MRI machines, and 140,000 times stronger than the Earth’s magnetic field. MRI with the 7-Tesla magnetic field is able not only to examine the body’s anatomy; the higher magnetic field also provides the capability to acquire functional information, such as a tissue’s blood flow (“perfusion”) and biophysical properties, as well as the chemical content and pH, using MRSI.

“High-field MRI is a dream come

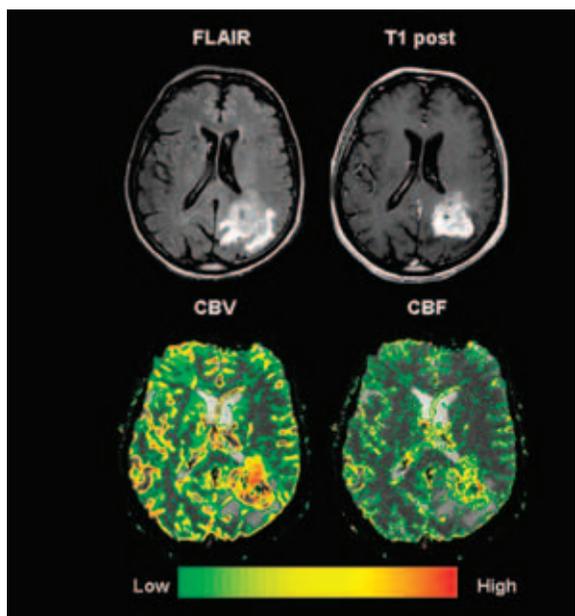
true,” says Joseph Helpert, PhD, Director of NYU’s Center for Biomedical Imaging and Professor of Radiology, Psychiatry, and Physiology and Neuroscience. “It’s noninvasive. It provides anatomic, metabolic, and physiologic information. It’s all in one.”

With his colleagues, including Jens Jensen, PhD, Associate Professor of Radiology and Physiology and Neuroscience, Dr. Helpert – a medical physicist by training – is working to further improve MRI technologies and applications.

One of the most exciting MRSI applications is the assessment of brain tumors. Meng Law, MD, Associate Professor of Radiology and Neurosurgery, received a grant from the National Cancer Institute (NCI) to evaluate MRSI for differentiating between benign and malignant brain tumors, and for predicting if a tumor is likely to behave aggressively. He is also developing perfusion imaging techniques to analyze blood flow in brain tumors, since aggressive tumors tend to have a greater blood supply than lower grade tumors.

Traditional tumor biopsy techniques are limited by what is called “sampling error.” That is, the tissue the surgeon removes for analysis may or may not represent the aggressiveness of the rest of the tumor. MRSI and perfusion imaging have the potential to bypass this limitation by assessing tumor metabolism and by visualizing variation in blood flow in different parts of the tumor, respectively. The approach could be done in conjunction with standard biopsy to provide additional information about how quickly and invasively a tumor might grow and spread. “This could be a useful tool for predicting tumor biology, the most effective therapy, and subsequently a patient’s outcome,” Dr. Law speculates.

High-field MRI is also being used to improve the care of patients with pancreatic and breast cancers. Oded Gonen, PhD, Professor of Radiology and Physiology and Neuroscience, and Howard Hochster, MD,



Top: **Magnetic resonance images show an aggressive brain tumor called glioblastoma multiforme.** Bottom: **Red areas on these perfusion MR images indicate parts of the tumor with extremely high blood flow and volume, confirming a very rapidly growing, malignant tumor.**

(7 Tesla) MRI – have been brought to NYU Medical Center to meet diverse clinical and research needs.

The combination PET/CT scanner, housed at the NYU Clinical Cancer Center, has become a powerful tool for diagnosing cancer and tracking its spread. The CT por-

Professor of Medicine (Oncology) and Pharmacology, received NIH funding to use MRSI to observe how the body metabolizes the anticancer drug gemcitabine in patients with pancreatic cancer that has returned after prior therapy or has not responded to treatment. They will see if the amount of gemcitabine that is converted into a form that slows tumor growth can be increased by changing the amount of time it takes to give the drug.

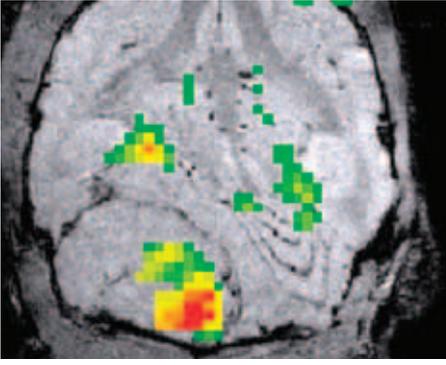
7-Tesla MRI also offers promise for imaging breast abnormalities. Traditional mammography, while recognized as an effective screening test for breast cancer, is limited in its ability to image dense breast tissue. Ray Lee, PhD, and Linda Moy, MD, Assistant Professors of Radiology, are investigating the use of 7-Tesla MRI to improve breast imaging. They have shown, for example, that high-field MRI can be used to distinguish milk ducts in dense fibrous tissue with far greater detail than mammography, potentially resulting in earlier breast cancer diagnoses.

Meanwhile, Back in the Lab...

Physicists and radiologists aren't the only ones raving about high-field MRI. Laboratory scientist Daniel Turnbull, PhD, Associate Professor of Radiology and Pathology, is using the technique to explore the intricacies of medulloblastoma in mice – the most common type of malignant brain tumor in children, which originates in the back of the brain.

With his colleagues Alexandra Joyner, PhD, Howard Hughes Medical Institute Investigator and Skirball Foundation Professor of Genetics and Professor of Cell Biology and Physiology and Neuroscience, and Howard Weiner, MD, Associate Professor of Neurosurgery and Pediatrics, Dr. Turnbull created a mouse model of medulloblastoma by introducing the Sonic hedgehog (*Shh*) gene into stem cells in the cerebellum of mouse embryos. Defects in the *Shh* signaling pathway have been implicated in some cancers, including some patients with medulloblastoma.

The researchers are using 7-Tesla MRI to study this cancer's development and progression. For example, they can produce



Perfusion MR image of a spontaneous medulloblastoma tumor in a mouse brain. The color map shows regions of high vascularity within the tumor.

images showing which parts of a tumor have the greatest blood supply, information that could eventually be used to track the effect of anticancer drugs that work by interfering with blood vessel development in tumors (a process called angiogenesis).

Taking that knowledge further, the investigators are developing new targeted MRI contrast agents to pinpoint the specific cells involved in the earliest stages of blood vessel development in mouse embryos. "Virtually all tumors develop blood vessels to grow and spread," explains

"Magnetic resonance spectroscopy allows us to non-invasively study drug metabolism at the cellular level in patients. There is no other way to do this without removing tissue, and using this technique, we can do sequential measurements over multiple time points." HOWARD HOCHSTER, MD

Dr. Turnbull. "Using MRI, our hope is that we can image just the earliest forming blood vessels in tumors, so we could directly image angiogenesis." If successful, the targeted agents they are developing could initially be used to enhance imaging, and ultimately to deliver anticancer drugs as well.

Scientists in other laboratories are using different imaging tools to see what is happening in cells at the molecular level. Mark Philips, MD, Professor of Medicine, Cell Biology, and Pharmacology, uses genetically encoded fluorescent proteins and

advanced imaging techniques such as "laser scanning confocal microscopy" and "fluorescence energy resonance transfer" to visualize what is going on within a cell.

Dr. Philips and his team have been exploring the function of the Ras protein, which latches onto a cell's membrane and initiates a cascade of signals that trigger cell growth and division. A mutated form of the Ras protein leads to uncontrolled cell growth and has been implicated in more than 30 percent of human cancers. Whereas early research focused on *what* activates the Ras protein, Dr. Philips and his colleagues are looking into *where* Ras communicates with other proteins inside the cell.

In a recent study, published in February as a cover story in the journal *Molecular Cell*, Dr. Philips and his colleagues reported that one Ras protein – K-Ras – can be manipulated to induce cells to commit suicide (an event called apoptosis). K-Ras was initially thought to be permanently anchored to a cell's membrane. But the researchers showed that an enzyme called protein kinase C can dislodge K-Ras from this site by adding a phosphate molecule to

it (a process called phosphorylation). Freed from the cell membrane, K-Ras then journeys to the cell's mitochondria – the powerhouse of the cell, which is intimately involved in regulating apoptosis.

The findings could have implications for the treatment of cancer, since cancer cells fail to undergo normal cell death and continue to grow and divide uncontrollably. "If we could find a way to phosphorylate K-Ras, we might be able to promote apoptosis in tumors whose growth is driven by the *ras* oncogene," Dr. Philips surmises. ■

late-breaking news

The NYU Cancer Institute received an \$85,000 contribution from **Team Continuum** to support programs for cancer patients. Team Continuum raises funds to provide immediate help to cancer patients being treated in New York's cancer treatment centers. The group also advocates for cancer patients to join support groups and



play an active role in their treatment. Team Continuum – which includes patients, doctors, and nurses – runs marathons to raise awareness and funding for patient-care programs. **Howard Hochster, MD**, Professor of Medicine (Oncology) and Pharmacology and a marathon runner himself, received the check at the Annual Colon Cancer Awareness seminar (see page 4) from Team Continuum's founder, Paul Nicholls, a cancer survivor and marathon runner.

Steven J. Burakoff, MD, Director of the NYU Cancer Institute, will host a **Scientific Symposium on May 24** to commemorate the opening of the new Joan and Joel Smilow Research Center. Leading biomedical investigators from around the country will gather to speak at the event, including: Nobel Prize winners David Baltimore, PhD, President of the California Institute of Technology, and Paul Greengard, PhD, Vincent Astor Professor at The Rockefeller Uni-



versity; Richard P. Lifton, MD, PhD, Howard Hughes Medical Institute Investigator, Chairman of the Department of Genetics, and Professor of Medicine, Genetics, and Molecular Biophysics and Biochemistry at Yale University School of Medicine; Ira Mellman, PhD, Sterling Professor of Cell Biology and Immunology and Chair of the Department of Cell Biology at Yale University School of Medicine; Hidde Ploegh, PhD, Whitehead Institute of Biomedical Research; and Eric Lander, PhD, Founding Director of The Broad Institute of MIT and Harvard.

Save the Date: The NYU Cancer Institute will host its **Fourth Annual Retreat on June 7** at Wave Hill in the Bronx. Sponsored by the Translational Research Committee, the day will include five sessions featuring 20 speakers, and a keynote address by Kenneth Anderson, MD, Kraft Family Professor of Medicine, Harvard Medical School, called "Multiple Myeloma: Changing Paradigms in Therapy." There will also be a scientific poster viewing. The retreat is one of the major events sponsored by the NYU Cancer

Study Shows Some Benign Breast Lesions May Harbor Cancer Cells

NYU researchers have found that some papillary lesions of the breast – typically benign growths in the breast ducts – may harbor cancer cells, and should be surgically removed for further examination.

When a mammogram or clinical examination reveals a breast abnormality that needs to be biopsied, a "core needle biopsy" is first performed to see if the lesion contains cancer cells. Papillary lesions account for up to 3 percent of all lesions sampled by core needle biopsy.

In the study, which was published in the journal *Radiology* in March, the NYU researchers found that 21.4 percent of 42 patients with benign papillary lesions found on core needle biopsy had their diagnoses upgraded to breast precancer or early breast cancer after a surgical biopsy revealed the presence of atypical cancer cells. "Our findings showed that all benign papillary lesions found using core needle biopsy should be surgically removed and analyzed, since a considerable number of precancers and cancers could be missed," concluded **Cecilia L. Mercado, MD**, Assistant Professor of Radiology and the study's lead author.

Institute to promote translational research. More than 120 investigators, fellows, and students participated in last year's event.

The NYU Cancer Institute would like to welcome two new staff members who previously worked in other departments at NYU Medical Center. **Alice Kwan** joins the NYUCI as Coordinator of Clinical Trials. She previously worked as Program Associate in the Department of Surgery for more than five years. **Lori Butler** is the new Administrative Assistant to Natalie Lewis-Ross, Administrative Manager for the NYU Cancer Institute. She will assist with clinical faculty recruitments, human resources issues, and all Cancer Institute administrative matters. She had worked as an Office Assistant for two years prior to her new position. We welcome Lori and Alice to our team.



Shlomo Perl has been elected to the NYU Cancer Institute's Board of Directors. Mr. Perl has had a distinguished career as an entrepreneur in a variety of business

fields. He is Chairman and CEO of Perl Equity Holdings, LLC. Mr. Perl has dedicated much of his life to philanthropy and public service, having served in several positions as a community leader. His business acumen and humanitarian values will be a great asset to the Board of Directors.

Donations to the NYU Cancer Institute can bring us closer to our goal of defeating cancer. Each gift – no matter what its size – furthers our research efforts, enhances our clinical services, and expands our community programs so that we may help more people overcome this illness. Contributions can be sent to:

NYU Cancer Institute
NYU Medical Center
Office of Development
550 First Avenue, PRK-10
New York, NY 10016

For more information, please call 212-404-3640. ■



Registration is required for all programs. Please call 212-263-2266 for more information and to register, unless otherwise noted.

FREE SKIN CANCER SCREENING

Thursday, May 11, 1:30 PM – 5:00 PM

Where: Charles C. Harris Skin and Cancer Unit, NYU Medical Center

Description: Join us for this FREE skin cancer screening in collaboration with the American Academy of Dermatology. No appointment is necessary. Please arrive no later than 4:30 PM. Please call 212-263-2627 for screening information.

Co-sponsored by the Ronald O. Perelman Department of Dermatology.

19th ANNUAL NATIONAL CANCER SURVIVORS DAY® *Creativity, Imagination and Healing: An Art Exhibition*

In recognition of the 19th annual National Cancer Survivors Day, join us for a week-long art exhibition beginning Monday, June 5.

DAILY NEWS FREE PROSTATE CANCER SCREENING

June 18 – June 25

For screening locations and dates at NYU Cancer Institute, please call 212-263-2266 or visit www.nyu.ci.org.

Co-sponsored by the Department of Urology.

THE AMERICAN CANCER SOCIETY'S MAN TO MAN® PROSTATE CANCER EDUCATION AND SUPPORT PROGRAM

Thursday, May 25, 5:30 PM – 7:30 PM, Location A*

Topic: *Radiation Therapy After Surgery for Prostate Cancer*

Presenter: Nicholas Sanfilippo, MD, Assistant Professor of Radiation Oncology

Thursday, June 29, 5:30 PM – 7:30 PM, Location A*

Topic: *Update on Prostate Cancer Research*

Presenter: Anna Ferrari, MD, Associate Professor, Department of Medicine (Oncology)

Refreshments will be served.

*Locations

A: NYU Clinical Cancer Center, 160 East 34th Street (between Lexington and Third Avenues), Room 1121

B: NYU Medical Center, 550 First Avenue (at 31st Street), Farkas Auditorium

WOMEN'S CANCER EDUCATION SERIES

Wednesday, May 3, 5:30 PM – 7:00 PM, Location B*

Women's Cancers: Know Your Risks

Presented as part of the Annual Lynne Cohen Foundation Scientific Symposium

Description: This session will examine the genetic and behavioral risks for breast and gynecologic cancers, medical and surgical advances in understanding risk and preventive care, and concrete steps that every woman can take to reduce those risks.

Presenters: Stephanie V. Blank, MD, Assistant Professor, Department of Obstetrics and Gynecology; Elsa Reich, MS, CGC, Professor, Department of Pediatrics (Genetics); and Julia Smith, MD, PhD, Clinical Assistant Professor, Department of Medicine (Oncology)

Refreshments will be served at 5:00 PM.

Thursday, May 18, 12:00 PM – 1:30 PM, Location A*

Cancer Prevention in Hispanic Families

This program will be conducted in Spanish.

Description: Our healthcare and social service providers will present important information that Hispanic people can use to stay healthy. Medical coverage and the rights of immigrants in obtaining health care will also be discussed.

Presenters: Karen Carapetyan, MA, Coordinator, Women's High-Risk Services; Yvette Martas, MD, Assistant Professor, Department of Gynecology; Juanita Lara, Latin American Integration Center.

This program is co-sponsored by Gilda's Club New York City and St. Vincent's Comprehensive Cancer Center.

A light lunch will be served.

Wednesday, June 14, 6:00 PM – 7:30 PM, Location A*

News from ASCO: Update from the 2006 American Society of Clinical Oncology Annual Meeting

Description: The American Society of Clinical Oncology Annual Meeting is considered the premier educational and scientific event in the cancer community. Join us to hear the latest updates from the 2006 Annual Meeting that focused on women's cancers, including preventive care, detection, and treatment advances.

Refreshments will be served at 5:30 PM.



The NYU Cancer Institute helps advance the care of patients with the most common types of cancer and blood disorders, including those of the:

- **Breast**
- **Gynecologic Cancers**
- **Gastrointestinal Tract**
- **Genitourinary System (such as prostate cancer)**
- **Nervous System (including brain cancer)**
- **Lung**
- **Head and Neck**
- **Melanoma**
- **Hematologic Cancers and other blood disorders**

NYU Clinical Cancer Center
160 East 34th Street
New York, NY 10016

As the principal outpatient facility of the NCI-designated NYU Cancer Institute, the NYU Clinical Cancer Center serves as home base for our patients and their care-givers. The center and its multidisciplinary team of experts provide convenient access to the latest treatment options and clinical trials, along with a variety of programs in cancer prevention, screening, diagnostics, genetic counseling, and supportive services.

IMPORTANT PHONE NUMBERS

New Patient Physician Referral Line	212-731-5000
Clinical Trials Information	212-263-6485
Mammography and/or Related Procedures	212-731-5002
Lucille Roberts Wellness Boutique managed by Underneath It All	212-731-5198
Lynne Cohen Breast Cancer Preventive Care Program 160 East 34th Street	212-731-5452
Lynne Cohen Cancer Screening and Prevention Project for High Risk Women Bellevue Hospital Center	212-263-3198
Stephen D. Hassenfeld Children's Center for Cancer and Blood Disorders	212-263-8400
100 Women in Hedge Funds National Ovarian Cancer Early Detection Program	212-731-5444
NYU Clinical Cancer Center Support Group Information Line	212-731-5480
Speakers Bureau & Community Outreach Programs	212-263-8043
Media Inquiries	212-404-3555
Office of Development	212-404-3640

If you would like to receive this newsletter, please sign up for our mailing list at www.nyuci.org.

FOR A PHYSICIAN REFERRAL, PLEASE CALL **212-731-5000**



NYU Cancer Institute
215 Lexington Avenue, 15th Floor
New York, NY 10016