

cancer

D I S C O V E R Y & C A R E



The power of many

Creating a legacy of hope for others

UPMC Cancer Centers *and*
University of Pittsburgh Cancer Institute



A Comprehensive Cancer
Center Designated by the
National Cancer Institute

The University of Pittsburgh Cancer Institute, working in conjunction with UPMC Cancer Centers, UPMC's clinical care delivery network, is western Pennsylvania's only National Cancer Institute (NCI)-designated comprehensive cancer center, reflecting the highest level of recognition by NCI.

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Targeting

a future without cancer



In 2010, it is anticipated that cancer will surpass heart disease as the number one killer in the United States.

It is with great pleasure that I have assumed leadership of the University of Pittsburgh Cancer Institute (UPCI) and UPMC Cancer Centers. As only the second director of this institution, I am following the accomplishments of Ronald B. Herberman, MD, who founded UPCI in 1985 and was instrumental in its progression to one of the top centers for research and clinical care in the country.

This is a tremendous time to be working in the field of cancer. We've seen significant declines in mortality rates for this devastating disease, due in large part to improved screenings, development of new therapies, more active prevention efforts, and advances in scientific discovery. But we're not done.

In 2010, it is anticipated that cancer will surpass heart disease as the number one killer in the United States. The need to translate scientific discovery to clinical practice is greater than ever — and we at UPCI and UPMC Cancer Centers are uniquely poised to do this. But we can not do it alone.

A large part of our success comes from the support of the Pittsburgh community — from our patients and families who benefit from our services, to community leaders who recognize the value of this institution to our region, to supporters from beyond western Pennsylvania who have learned about the good work happening here and choose to be a part of those efforts.

These advocates have been instrumental in laying the foundation of our institution — and they will be the cornerstone of our growth in the future. I look forward to our continued partnership as we work together to build a future without cancer.

A handwritten signature in black ink that reads "Nancy E. Davidson". The signature is fluid and cursive, with a large, stylized "N" and "D".

Nancy E. Davidson, MD

*Director, University of Pittsburgh Cancer Institute and UPMC Cancer Centers
Associate Vice Chancellor for Cancer Research*

*Hillman Professor of Oncology
Chief, Division of Hematology/Oncology*

*Professor of Medicine
University of Pittsburgh School of Medicine*

Finding the

MIRACLE

in Day-to-Day Challenges



Of all the branches of the nursing profession, few experience the pain, the hope, and the human drama as much as those who work with cancer patients — *oncology nurses*.

Some take a direct path to oncology nursing, like Chris Carlisle, a clinical manager of four UPMC Cancer Centers network offices, where most cancer patients go to receive their chemotherapy treatments. She has been an oncology nurse for most of her 30-year nursing career. Others take a more circuitous route, like Theresa Brown, who works in an oncology unit at UPMC Shadyside, and is also a writer. Ms. Brown was a former literature professor who returned to school for her degree in nursing in 2007. She also writes on the challenges of her profession through a blog on *The New York Times* website, and is the author of a forthcoming book, “Critical Care: A Nurse’s First Year,” which will be published by HarperStudio in 2010.

What both women enjoy most about their profession are the relationships they develop with their colleagues and patients: the families they meet and get to know, the ups and downs of their patients’ treatments, the joys of healing and remission, and weathering the pain of downturns and grief.

Among her duties on a busy oncology floor with 27 patient rooms, Ms. Brown does stem cell transplants

with the help of a stem cell technician. Her biggest challenge, she says, is dealing with the time pressures she faces daily. “One patient needs meds, another needs to be picked up for a CT scan, another needs a specialty consult, a fourth has nausea, and my phone is ringing,” she says.

What helps get her through the day is taking the “one day at a time” approach and the grace of her colleagues. “The nurses I work with are generous with their time and knowledge,” says Ms. Brown. “Their focus is on patient-centered care, always focusing on what’s best for the patient.”

Pathways to the best cancer care

For Ms. Carlisle, her days are a multitasking and balancing act consisting of multiple components, all critical in meeting the needs of the patients, while keeping on top of what her staff needs. On any given day, she and the staff could be working on the phone performing patient triage: filling prescriptions, answering questions, checking with doctors, arranging for transfusional therapy treatments, or providing emotional support to a family member; or administering chemotherapy treatments, which can take anywhere

“Days are a multitasking and balancing act consisting of multiple components, all critical in *meeting the needs of the patients.*”

—Chris Carlisle, RN, OCN



from 20 minutes to eight hours, or spending time educating a patient on their treatment plan. A nurse can even become a social worker, finding patient assistance programs to cover medications if a patient is unable to afford them.

One thing that makes her day easier is providing her patients with standardized cancer care created by UPMC Cancer Centers’ Clinical Pathways program. Clinical Pathways define a treatment program for each specific type of cancer, based on each patient’s unique circumstances.

continued

Developed by teams of physicians, each pathway combines innovative clinical trials with the most effective standard therapies to serve as a detailed “road map” for the treating physician to help develop each individual treatment plan. Ongoing physician review ensures that each pathway is the best, most effective treatment option available.

“Clinical Pathways are user-friendly, and a great time saver,” explains Ms. Carlisle. “Having Pathways to follow eliminates the need for handwriting and recopying orders, reducing the risk for medication errors, and increasing our direct care time with patients. With Pathways, we know what’s on the order and can make sure our drug inventories are complete. And our nurses are confident that they are providing the best treatments available to their patients.”

Sharing the grief and the joys

For Ms. Brown, writing a blog on nursing for *The New York Times* online health section has helped her weather the challenges of oncology nursing through sharing her experiences with others. The postings she receives from readers are often “incredible” stories of grief and triumph over the adversities they face. “Reading those helps, because it makes me feel part of a larger conversation about cancer and grieving, and how tough it is to be faced with this difficult disease.”

Ms. Carlisle and the clinical staff draw strength from caring for their patients, and meeting the demands that every day brings. “There are difficult days; you have to be extra flexible, and you’ve got to love your patients, and be there for them even when they’re angry or having a bad day. This is when they need us the

most,” she says. “But there are so many joys. Every single patient teaches us something about living, and about life. Here, you know you’ve made a difference.”

At work one day, Ms. Brown picked up a handmade book of patient photographs. On its pages, the patients had recorded their thoughts on what the stem cell treatments

had made possible for them. “I got to see my grandkids,” said one entry. “I got to learn how to sail,” noted another. “Holding that book was magic,” she recalls. “The treatments had saved their lives, and they would do it all over again. They had a chance at a miracle, and they took it.” ■

“It makes me feel part of a larger conversation about cancer and grieving, and how tough it is to be *faced with this difficult disease.*”

—Theresa Brown, RN



WHY I DO WHAT I DO

(Now I Know)

By Laura Schatzkamer, MS

I arrived in Pittsburgh in August 1991, and nine days later began teaching at Community College of Allegheny County (CCAC) as an adjunct instructor in biology. In 1998, I was hired as a full-time faculty member at St. Francis Medical Center School of Nursing, where I taught all of the sciences. During my time there, I learned how to teach nursing students. When St. Francis Medical Center closed in 2002, I returned to adjunct work and found I was in great demand. For the next four years, I taught for UPMC Shadyside School of Nursing, UPMC St. Margaret, UPMC McKeesport School of Practical Nursing, and CCAC. I had more work offers than I could accept.

Now I am an assistant professor at Carlow University, and teach anatomy and physiology to first-year nursing students. I love having brand new students eager to embark on their education that will prepare them for their careers, and I take my responsibilities seriously. No one wants to have a nurse who does not know anatomy! It is my privilege to be their guide. Not only do I teach anatomy, but I make a conscious effort to model professionalism, good mood, and a positive approach to life.

I love my subject. I marvel over the body and try to convey my awe about how we are made. I am a biologist and not a clinician, but part of my obligation is to relate the study of the body to the nursing profession. I have a responsibility that extends beyond the student to people I will never meet: their patients. During their careers, they will use this knowledge, and later come to find out that I spoke the truth.

What happened to me this fall was absolutely astounding. I was diagnosed with breast cancer in September and in November was at Hillman Cancer Center for a consultation. Who should I run into but the president of the 2004 graduating class of UPMC Shadyside School of Nursing, Joseph R. Rapp. I immediately became self-conscious because I had not yet gone public with my diagnosis. But Joe came to me and said, "I think of you every day, and I owe so much to you. I think I remember every single class, and I tell everyone here that what I know about the body I owe to my anatomy teacher, 'Mrs. S.' I am a nurse clinician here at

Hillman, and I will help you get through your treatment; we will do this together." Is it fathomable that such a circle can be made?

Not only fathomable, but repeated. Prior to my chemotherapy, I needed to have a test at UPMC Shadyside. While awaiting entry to the testing room, I heard "Is that Mrs. Schatzkamer?" and a lovely young woman, Deb Komora, a student of mine at CCAC, now a registered nurse at UPMC Shadyside, hugged me meaningfully and tightly. After a brief exchange about my need for the test, Deb stated, "I still have your e-mail address and I will e-mail you tonight. Do you know that everything I know about the heart I owe to you? You made me learn it, and then I found out that I used it. And I really needed to know the cranial nerves, as you said I would. And now I'm into the brain, and you taught me that too." Not only was an e-mail awaiting me that night when I returned home from the hospital, but contained in that e-mail was the following offer: "You said that you are having chemotherapy this Friday, and that is my day off. There is no where else that I would rather be, than with you, for your first treatment," she wrote.

Another circle completed, and it is the circle that tells me why I do what I do. If I ever wondered, now I know. I never imagined being sick, because I have been blessed with the healthiest of bodies until this diagnosis. It never dawned on me that any nurse that I was educating would treat me, but I always knew that they had to be educated well because they would treat real, live patients, and make enormous differences in many lives. These two UPMC nurses, only two whom I have met thus far on my journey as a patient, have shown me gratitude for what I taught them, and love for the spirit behind the teaching. I am finding out that my life has meaning well beyond myself and my own family. Discovering and being told that you have made a difference is a bit of knowledge that most are not fortunate enough to attain. Despite a cancer diagnosis, right now I feel that I could not be luckier. ■

Laura Schatzkamer was treated at Hillman Cancer Center.



Every year thousands of women, family, and friends adorned with pink ribbons take over our streets and parks. For many of these women, the annual Race for the Cure[®] is a celebration of life because they are survivors; for others, it is a place to connect with friends and family to honor the memory of a friend or loved one. Although they may be there for different reasons, they share a common goal — to raise awareness and money to find a cure for breast cancer.

The power of many

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Ways Grateful Patients Give Back

February

- 3rd Annual “Women Think P.I.N.K.” event to benefit the UPMC Cancer Centers’ Patient Assistance Fund



March

- 14th Annual “Hoops for a Cure” basketball tournament to benefit the Nathan S. Arenson Fund for Pancreatic Cancer Research

April

- AI Copeland Foundation: 2nd Annual April Fools Golf Classic benefitting Merkel Cell Cancer Research through the AI Copeland Foundation

While most research is supported through funding from organizations like the National Cancer Institute (NCI), it isn't always enough. The disparities in the allocation of research funds versus the need for newer, more potent therapies for other cancers are staggering. In 2008 the NCI spent nearly \$4.8 billion on cancer research. Compare that to the estimated cost of developing new cancer drugs. In their 2009 annual budget, the federal Food and Drug Administration (FDA) set the price tag to bring a new cancer drug to clinical application at an estimated \$802 million.

The Susan G. Komen Foundation, one of the most recognized grassroots cancer organizations, was started by six volunteers with a passion to raise awareness and money to fund breast cancer research. Komen has worked diligently to put breast cancer on the national forefront. However, this awareness doesn't always transcend to other forms of cancer.

Here in Pittsburgh and beyond, many families are recognizing the disparity in funding for traditionally underfunded and rare cancers. These families are playing an important role in filling the gap by raising awareness and funds to make an impact.

Turning tragedy to hope

"Many of our donors choose to give because they themselves or a loved one have been impacted by cancer

and they recognize the critical need for support to translate new discoveries in the laboratory into effective new cancer treatments," says Nancy E. Davidson, MD, director, UPCI and UPMC Cancer Centers. "By supporting cancer research and treatment, our donors are helping to improve the lives of others affected by cancer."

For example, pancreatic cancer is one of the most devastating diseases. Survival rates are poor because pancreatic cancer is not easily diagnosed, and current therapies are limited. Families who have been touched by this disease are frustrated by the high incidence and lack of education about the disease.

Before Jill Fusaro's husband Wayne was diagnosed in 2000, she didn't really know much about pancreatic cancer. After her husband passed away, she started looking for more information and was frustrated to find that not only was pancreatic cancer a leading cause of cancer death, but it received very little research funding. This served as motivation for Jill to start the Wayne Fusaro Pancreatic Cancer Research Fund to honor her husband and to raise awareness and money to fight the deadly disease.

For the past nine years, the Fusaro Fund has held numerous events, including golf outings, dances, and walks. They also sell cookbooks, which can be purchased at the Hillman Cancer Center Gift Shop. Funds raised by the organization support the research of David Whitcomb, MD, PhD, Giant Eagle Foundation Professor of Cancer Genetics. They chose Dr. Whitcomb's lab because they wanted to support local research that directly impacted pancreatic cancer.

"People don't realize how lucky we are to have the medical community here in Pittsburgh," says Jill. "It has to be frustrating for physicians like Dr. Whitcomb that so little funding is given towards research for this disease."

Monies raised by the Fusaro Fund have enabled Dr. Whitcomb's lab to purchase equipment to analyze genetic data and to study potential methods of early detection for pancreatic cancer. Their contributions played a large role in the discovery of a new cancer gene associated with an inherited form of pancreatic cancer. This breakthrough marked the identification of the first genetic defect that is directly linked with pancreatic cancer. Dr. Whitcomb commends the Fusaros on their support of his research.

"I have seldom witnessed such volunteer commitment and dedication throughout my entire professional career," says Dr. Whitcomb. "The Fusaro family's hard work and determination have made them a success."

The Arenson family is also familiar with the impact of pancreatic cancer. Nathan Arenson was diagnosed with pancreatic cancer in 1993. Despite a poor prognosis, Mr. Arenson spent his remaining days with his family living life to the fullest. After he passed away in 1995, his family and friends created the Nathan S. Arenson Fund for Pancreatic Cancer Research to carry on his legacy and passion for life in hopes that pancreatic cancer research will bring us closer to the day that other families will not have to sustain the loss that they suffered.

continued



May

- 3rd Annual "Cooking Up a Cure" to benefit the Jane and Carl Citron Endowed Chair in Colon Cancer

June

- 2nd Annual Saulle's Teddy Bear Official Memorial Parade (S.T.O.M.P) for the Linda Saulle Endowed Memorial Fund to benefit Gastrointestinal Tumor Research

- 4th Annual Kathy Vetere Memorial Golf Outing to benefit Breast Cancer Research

continued

- Spring Fling to Blot Out Breast Cancer for the Dr. Joan G. Gaines Breast Cancer Research Fund

The Arensons have raised funds for 14 years with their annual Hoops for a Cure event to support the research of Olivera J. Finn, PhD, co-leader of the UPCI Cancer Immunology Program. Funds from the Arensons' efforts have helped to support the development of a dendritic cell-based therapeutic vaccine that has been shown in clinical trials to stop progression of cancer in some patients.

After John Fortney was diagnosed with pancreatic cancer in 2006, he approached his surgeon, A. James Moser, MD, co-director, Pancreatic Cancer Specialty Care Center, UPMC Cancer Centers, to find out how he could play a role in furthering local pancreatic cancer research. That conversation led to the development of The John F. Fortney Charitable Pancreatic Cancer Research Group.

With the help of friends and family the Fortney Group has held two annual golf outings with another one in the works. Sadly, John passed away a month before the second golf outing. According to his daughter, Karen Fortney Balk, her father's mission was to help change the future for patients with pancreatic cancer.

"Until you get to know the disease, you have no idea how devastating it can be," says Karen. "There is a dire need for better therapies, many of which are being developed right here in Pittsburgh."

The Fortney Group supports the research of Dr. Moser whose lab is investigating the use of computer and genetic modeling to personalize treatments for patients with pancreatic cancer. Contributions from the foundation helped to fund research that

led to the development of the first genetic analysis of pancreatic tumors that may determine whether surgery is likely to benefit patients.

"The Fortneys have inspired everyone in the Pancreatic Cancer Specialty Care Center with their devotion to their father's cause and memory," says Dr. Moser.

Supporting excellence in patient care

Jane Citron was an energetic and vibrant person with a tremendous passion for cooking, teaching, and writing about food. Even after she was diagnosed with colon cancer in 2000, she continued to teach cooking classes and to travel as a food writer for the *Pittsburgh Post-Gazette*.

During her six-year battle with colon cancer, Jane and her family were very impressed by the treatment and care she received at UPMC. After researching colon cancer, they soon learned that although the disease strikes many people, no local philanthropic organizations supported colon cancer research.

Jane lost her battle with colon cancer in 2006. Before she passed away, with Jane's blessing, the Citrons established the Jane and Carl Citron Chair in Colon Cancer to support local colorectal cancer research in honor of her surgeon, Kenneth K.W. Lee, MD, vice chair, Graduate Education and program director, Department of Surgery, UPMC.

To raise money for the fund, the Citrons have organized three highly successful dinner events called "Cooking Up a Cure." Held at Oakmont Country Club, the events featured a spectacular menu that would delight anyone's palate and a

silent auction. Additionally, the family has developed *Living to Cook*, a cookbook featuring recipes written and compiled by Jane before her death. Proceeds from the sale of the cookbook will benefit the endowed fund and UPMC Cancer Centers' Patient Assistance Fund.

"The care and treatment that my mother received were unbelievable," says Jane's son, Alan Citron. "We were stunned to find that no local charities supported colon cancer research. We knew we needed to do something to make a difference."

The endowed chair supports research on colorectal cancer and its prevention, as well as clinical programs that support excellence in patient care.

"We are grateful to the Citrons for their generous support and extraordinary commitment to advancing colon cancer research," says Dr. Lee. "The Citron family has turned a heartbreaking situation into one that is giving renewed hope to thousands of colon cancer patients."

Also touched by cancer and wanting to make a difference for others is the Koch family. David C. Koch, who came to Pittsburgh from New York for treatment, was revered as an astute businessman and a strong leader, tackling whatever came his way head-on, including cancer. In December 2002, David lost his six-year battle with cancer. To continue his fighting spirit, the Koch family established the David C. Koch Regional Cancer Therapy Center of UPMC Cancer Centers to not only serve as a tribute to David, but to impact the development of new cancer therapies.

June continued

- 4th Annual Dee Dee Sacco Fight for Life Fund Golf Outing to benefit the UPMC Cancer Centers' Patient Assistance Fund
- 2nd Annual Mellie's Mission 5K Run/Walk to benefit pancreatic cancer research

July

- 9th Annual Golf Outing benefitting the Wayne Fusaro Pancreatic Cancer Research Fund
- 3rd Annual "Stampede in the Park" 5K Run/Walk to benefit leukemia research

- 7th Annual David C. Koch Memorial Gala & Golf Tournament to benefit the David C. Koch Regional Cancer Therapy Center

August

- 15th Annual Grant Channell Memorial Golf Outing to benefit the Melanoma & Skin Cancer Program at UPCI



“Cancer research is going to be the salvation for the next generation. It is going to take researchers to defeat it, and it’s going to take people supporting the researchers,” says his wife, Valerie Koch. “I thought if in some small way our family could help, then that’s what we wanted to do.”

As part of their efforts, the Koch family has sponsored the David C. Koch Memorial Gala & Golf Tournament for the past seven years. Contributions from the event continue to give hope to

As federal resources for research funding become more difficult to obtain, individual giving is becoming an ever more important source of support.

thousands of patients whose cancer has advanced beyond a surgical cure. The Koch Center focuses on regional perfusion chemotherapy, delivering higher concentrations of chemotherapy to cancers that are inoperable, but localized. It also funds the research of David L. Bartlett, MD, chief of the Division of Surgical Oncology and director of the Koch Center, who is investigating novel biologic therapies, including vaccines and other targeted therapies.

“There is no question that the most limiting step in the development of better cancer treatment is the financial support of research,” says Dr. Bartlett. “We are grateful to the Kochs for recognizing that.”

Better treatments for rare cancers

Some donors are compelled to give because of personal experience, wanting to support the people who directly cared for them. Others see research advances and want to support those efforts.

Al Copeland, New Orleans native and founder of Popeye’s Famous Fried Chicken, was the victim of a rare form of skin cancer known as Merkel cell carcinoma. Mr. Copeland passed away in March 2008 after battling Merkel cell carcinoma for over a year. Before his death, he and his children established the Al Copeland Foundation in hopes of raising money to help find a cure for this rare disease. When his family learned about a significant research discovery by Patrick S. Moore, MD, MPH, and Yuan Chang, MD, at UPCI, they decided to make a gift to support future research.

Drs. Chang and Moore’s discovery of a virus linked to 80 percent of Merkel cell carcinoma tumors is now leading to a better understanding of how normal Merkel cells become malignant. The team hopes to eventually develop a blood test to detect the virus that causes the majority of Merkel cell carcinoma cases.

To raise money, the foundation has sponsored numerous events, including an annual boat race, gala, and golf tournament. “Our motivation is to raise awareness for Merkel cell carcinoma

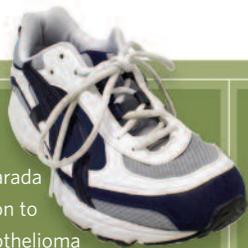
through our events, while raising money to help find a cure,” says Mr. Copeland’s daughter, Charli Copeland Womac.

The Copeland family has run a number of promotions across its portfolio of restaurants to generate awareness and funding for the cause. The family’s other restaurants include Copeland’s of New Orleans, Copeland’s Cheesecake Bistro, and Copeland’s Social City. Additionally, the company partnered with NBA superstar Chris Paul to create a wristband benefitting both the Al Copeland Foundation and Mr. Paul’s basketball camp. Wristbands can be purchased on the Al Copeland Foundation’s website.

“The funds from the foundation will help support our search for treatment and eventual cure of this disease,” says Dr. Moore.

Making a difference

As federal resources for research funding become more difficult to obtain, individual giving is becoming an ever more important source of support. The millions of dollars raised through the efforts of grateful patients and their families are making a significant impact on cancer research here in Pittsburgh. “These families are not only providing critical resources for immediate needs and priorities, but they are making a sustainable investment that will allow for the growth of our research programs well into the future,” Dr. Davidson says. ■



- 10th Annual Michael J. Parada 5K Walkathon to benefit mesothelioma research

September

- 3rd Annual Golf Outing, Dinner & Auction benefitting the John F. Fortney Charitable Pancreatic Cancer Research Group
- 5th Annual Dee Dee Sacco Fight for Life Fund Cocktail Party to benefit the UPMC Cancer Centers’ Patient Assistance Fund

October

- 3rd Annual Dance benefitting the Wayne Fusaro Pancreatic Research Fund

December

- Al Copeland Foundation Christmas Gala





TARGETED THERAPIES aim for a cure

Cancer treatments have improved, but we are still a long way from a cure.

It's been nearly 38 years since President Richard Nixon signed the National Cancer Act declaring war on cancer. Since 1971, the landscape of cancer care has changed dramatically. Thanks to significant advances in the understanding, diagnosis, and treatment of the disease, people are living longer; side effects of cancer treatments are being managed better; and cancers are being diagnosed sooner, when treatment may be more effective.

Despite many milestones, cancer incidence is still on the rise. By 2010, cancer is set to surpass heart disease as the number one killer in the United States. The need to translate scientific discovery to clinical practice is greater than ever.

As one of the nation's top centers for care and research, the University of Pittsburgh Cancer Institute (UPCI) has played a major role in developing new strategies for cancer diagnosis and treatment. In the mid-1990s, a research team led by John Kirkwood, MD, director of the Melanoma and Skin Cancer Program at UPCI, showed that treatment with high doses of a potent anti-cancer drug called interferon helped some patients with advanced melanoma to live longer. This study led to the first federal Food and Drug

Administration-approved melanoma therapy for preventing relapse of the disease.

Since that groundbreaking study, UPCI has been on the leading edge of translating scientific discovery to clinical application.

Radiosurgery using the Gamma Knife® radiation delivery system was first performed in the United States at UPCI, where investigators continue to evaluate this technology and its use for an innovative gene therapy trial for patients with brain tumors.

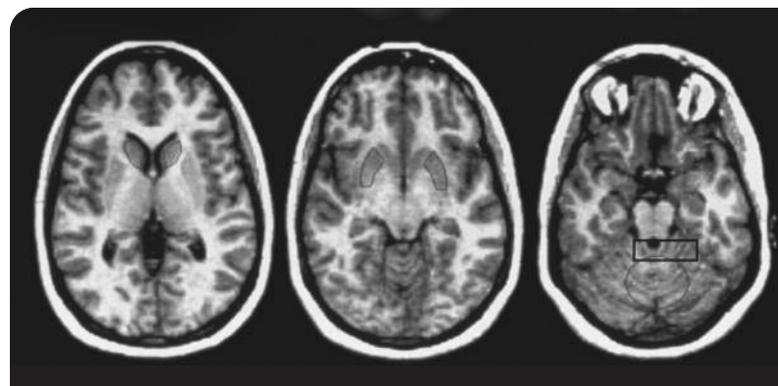
UPCI scientists developed procedures to purify and activate natural killer (NK) cells, which are key components of the immune system for fighting cancer. They also have demonstrated that activated NK cells can be safely administered to cancer patients, and in some instances, can partially or even completely eliminate detectable disease.

The combination of positron emission technology (PET) and computed tomography (CT) was developed by UPCI-affiliated scientists. This state-of-the-art imaging technology allows physicians to visualize whether treatment is working and to adjust treatment as needed.

The next generation of targeted therapies

Recent advances in the understanding of the cellular processes of cancer are paving the way for the next generation of therapies. UPCI researchers are working hard to develop cancer therapies that target cancer cells with greater specificity, to decrease side effects and improve the quality of life for patients.

One study is offering patients with a rare type of brain tumor a new option for treatment. According to principal investigator Hideho Okada, MD, PhD, co-director of the Brain Tumor Program, UPCI, the trial is exciting because there have been



“Results from pivotal advances such as these offer encouragement, but we are still a long way from a cure,” says Nancy E. Davidson, MD, director, UPCI and UPMC Cancer Centers.

very few clinical trials for patients diagnosed with low-grade gliomas.

continued

This is due to a number of factors: patients tend to do well for a period of time because the tumors are slow-growing; and they are also extremely rare. Only 1,800 new cases are reported annually in the United States.

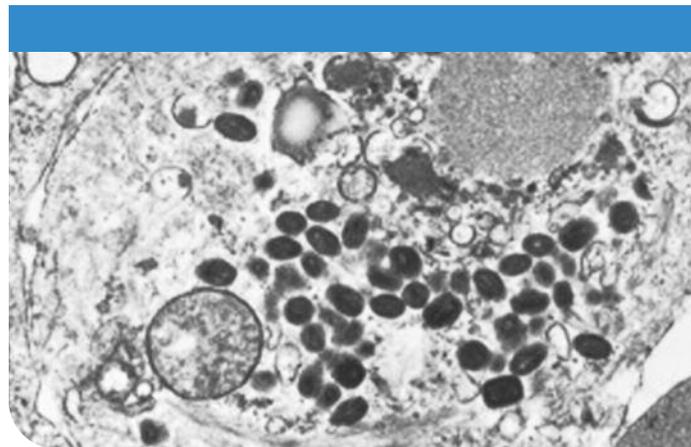
The current standard of care for patients with low-grade gliomas is to manage the symptoms and to remove or reduce the tumor. “Deciding when to offer treatment to these patients has been controversial,” says Dr. Okada. “Although radiation therapy has been shown to prolong a patient’s progression-free survival, there is no established standard as to when treatment should be offered.”

The study will evaluate the safety and immune response of a novel, peptide-based vaccine. Most vaccine trials to date have targeted high-grade (rapid growth) glioma cells. By targeting tumors at earlier stages of development, researchers hope to prevent or slow the growth of new tumor cells.

Another UPCI study is investigating the use of a well-known virus to treat cancer. The vaccinia virus, more commonly known for its use as the modern smallpox vaccine, was first used in the 1930s to inoculate millions of people against smallpox. UPCI researchers have taken a very different approach, capitalizing on the virus’s natural ability to replicate and kill cells to destroy tumors.

The vaccinia virus has many advantages as a targeted therapy. “Vaccinia is able to spread rapidly from cell to cell and efficiently destroys infected cells,” explains Herbert J. Zeh, MD, principal investigator of the trial. “We have been able to show in the laboratory that vaccinia demonstrates significant antitumor properties against virtually all human cancer cell lines.”

“We are moving closer to personalizing therapies which more accurately target cancer and improve patient outcomes.”



UPCI researchers have genetically re-engineered the virus to make it more tumorspecific by eliminating the genes necessary to divide in normal cells. They hope that the modified vaccinia will lead to a radical new approach to cancer therapy.

“The vaccinia virus is unlike any other anticancer agents currently being utilized,” says Dr. Zeh. “For a patient who has exhausted all of their options for treatment, this therapy may offer renewed hope.”

For some cancers, genetics may play a large role in how they are treated. Researchers at UPCI are investigating a potential new therapy for patients with cancers related to a BRCA 1 or 2 genetic mutation.

ABT-888 is a drug previously proven to improve chemotherapy’s effectiveness by lowering cancer cell resistance to treatment. Cancer cells have

The drug is intriguing because it is essentially tailored therapy specifically targeting the cancers caused by BRCA mutations. “Unlike chemotherapy, which affects all cells, this drug only affects the tumor cells with the mutation,” says Shannon Puhalla, MD, principal investigator of the trial. “Patients aren’t going to lose their hair with this drug, or become nauseous. They can have a better quality of life while on the trial.”

Additional data suggest that certain types of breast and ovarian cancers in patients without BRCA mutations may be sensitive to the drug as well, making it a possible option for many other patients.

Targeting a future without cancer

From vaccines and viruses targeting cancers at its earliest stages, to new applications of drugs that improve the quality of life for patients, UPCI is building on its scientific strengths to develop new therapies that are changing the standards of treatment for many types of cancer.

“This is a most exciting time to work in the field of cancer,” says Dr. Davidson. “Thanks to advances in scientific discovery, we are moving closer to personalizing cancer therapies that more accurately target cancer and improve patient outcomes.” ■

been shown to have increased levels of the polymerase (PARP) family of enzymes, which are believed to cause resistance to chemotherapies and other cancer treatments. ABT-888 inhibits this resistance, which means cancer cells become more sensitive to chemotherapy. Early data suggest that patients with BRCA mutations may be particularly sensitive to this drug because their tumor cells are reliant on the mechanism of DNA repair that is suppressed by the drug.

Bridging laboratory to clinic to community

Dr. Nancy E. Davidson's vision for the future of cancer care and research in Pittsburgh

In February 2009, Nancy E. Davidson, MD, joined an elite group as one of only 40 individuals currently leading an NCI-designated Comprehensive Cancer Center. That she should ascend to this role is no small feat, but not a surprise.

An internationally renowned breast cancer expert, and one of the most respected cancer clinicians in the country, Dr. Davidson brings a passion and commitment that will lead the University of Pittsburgh Cancer Institute and UPMC Cancer Centers to develop new approaches to the prevention, early detection, and eventual cure of cancer.

Dr. Davidson recognizes that she has big shoes to fill. As only the second director of the institution, she follows Ronald B. Herberman, MD, who brought the institution to national prominence in record time. "Dr. Davidson is an outstanding physician-scientist," says Dr. Herberman. "Her research has advanced the understanding of the molecular and cellular biology of breast cancer combined with pioneering new therapeutic approaches to the disease. She has made a tremendous impact in the cancer field."

While director of the Johns Hopkins Kimmel Cancer Center's Breast Cancer Program in Baltimore, Dr. Davidson integrated basic scientific investigation of the biology of breast cancer with a national clinical program focused on new therapies for the disease. She has published key findings on the role of hormones, particularly estrogen, on gene expression, and cell growth in breast cancer. She also has guided several important national clinical trials of potential new therapies, including the use of chemoendocrine therapy for premenopausal breast cancer and antiangiogenesis therapy for the disease.

Dr. Davidson is a firm believer that good science makes good medicine. "The unique structure of UPCI and the UPMC Cancer Centers network gives us an unparalleled opportunity to translate what we are learning at the bench to clinical application through trials and changes in treatment standards. It is one of the key things that drew me to Pittsburgh," she says.

With cancer poised to surpass heart disease as the number one killer in the United States by next year, the need to quickly move scientific discovery into treatment is greater than ever. "By integrating our strengths in basic, clinical, and translational research, we will be able to make a significant impact on the burden of cancer," says Dr. Davidson. Her vision is to enhance current basic science programs, expand the focus of disease-specific research, and build on UPCI's strengths in epidemiology, population, and behavioral research.

UPCI and UPMC Cancer Centers are on the leading edge of targeted cancer therapy, including development of vaccines targeting cancer at its earliest stages, new applications of radiation technology that reduce toxicity, and minimally invasive surgical options that lead to better outcomes for patients. "We are moving closer and closer to a personalized approach to cancer treatment — giving the right treatment to the right person at the right time," explains Dr. Davidson. "Ultimately we will reduce morbidity and mortality from cancer." ■

UPMC partners with GE Healthcare to advance international expansion

In late 2008, UPMC announced a partnership with GE Healthcare, a unit of General Electric Company, to continue its international expansion.

UPMC plans to open 25 cancer centers in Europe and the Middle East in the next decade and has selected GE Healthcare as strategic supplier of medical equipment for the planned centers. The new facilities will bring comprehensive cancer care that includes medical and surgical oncology, radiation, and ancillary radiology and laboratory services to these regions. The collaboration is part of UPMC's larger strategy of commercializing its medical, technology, and management expertise for the benefit of patients.



UPCI researcher awarded ASCO professorship

Merrill Egorin, MD, professor of medicine and pharmacology at the University of Pittsburgh Cancer Institute (UPCI), received the 2009 American Society of Clinical Oncology (ASCO) Translational Research Professorship during the 2009 Annual Meeting. Dr. Egorin received the award for his work in improving cancer treatments and supporting the next generation of researchers.

Dr. Egorin will use the professorship, which provides \$100,000 annually for five years, to continue his preclinical and clinical studies of the polymerase (PARP) family of enzymes and how they work as cancer therapies.

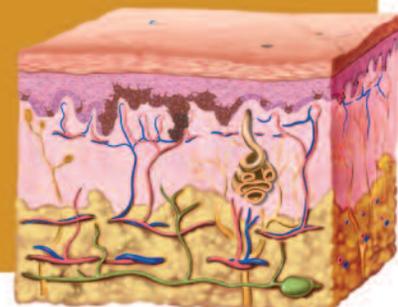


Merrill Egorin, MD

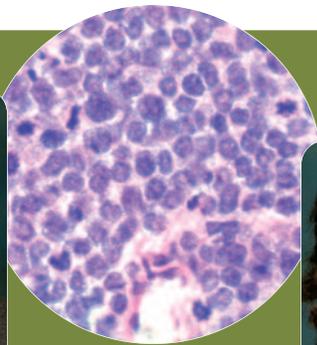
UPCI program receives SPORE grant

The National Cancer Institute (NCI) has designated UPCI as a Specialized Program of Research Excellence (SPORE) in skin cancer, making it one of five programs nationwide recognized to advance the prevention, detection, diagnosis, and treatment of the most prevalent form of cancer in the United States. The UPCI Melanoma and Skin Cancer Program, based at Hillman Cancer Center, is the recipient of the only new Skin Cancer SPORE awarded in the past several years.

UPCI will receive a five-year, \$11.5 million federal grant to examine innovative treatment strategies designed to improve survival outcomes for patients with skin cancers, focusing on melanoma and cutaneous T cell lymphoma. The grant is the third SPORE awarded to UPCI, and will be administered by John M. Kirkwood, MD, director of the Melanoma and Skin Cancer Program at UPCI. The SPORE will focus on five translational research projects which will extend Dr. Kirkwood's work in developing cancer vaccines to combat melanoma.



Patrick Moore, MD, MPH



Yuan Chang, MD

UPCI husband and wife research team receive award

In January 2009, the Carnegie Science Center announced that a husband and wife research team at UPCI would receive the Life Science award for their discovery of two different viruses that cause cancer in humans as part of the 2009 Carnegie Science Awards.

Yuan Chang, MD, and Patrick Moore, MD, MPH, discovered that the viruses, Merkel cell polyomavirus (MCV) and Kaposi's sarcoma-associated herpesvirus (KSHV) both cause skin cancers in humans. These findings may lead to new cancer treatment and prevention options.

UPMC Cancer Centers *and*
University of Pittsburgh Cancer Institute



A Comprehensive Cancer
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The University of Pittsburgh Cancer Institute, working in conjunction with UPMC Cancer Centers, UPMC's clinical care delivery network, is western Pennsylvania's only National Cancer Institute (NCI)-designated comprehensive cancer center, reflecting the highest level of recognition by NCI.

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UPMC Cancer Centers offers cancer patients exceptional care and innovative treatments close to home. Working in tandem with the University of Pittsburgh Cancer Institute, western Pennsylvania's only National Cancer Institute-designated Comprehensive Cancer Center, UPMC Cancer Centers provides the latest advances in cancer prevention, detection, diagnosis, and treatment at community-based locations throughout the region. The University of Pittsburgh Cancer Institute comprises the academic and research activities for cancer at the University of Pittsburgh and UPMC.

For information about supporting cancer research efforts and patient care at UPMC Cancer Centers and the University of Pittsburgh Cancer Institute, contact us at 412-623-4700.

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