Cancer Consult provides information from Cleveland Clinic Cancer Institute specialists about innovative research and diagnostic and management techniques.

Please direct correspondence to
Brian Rini, MD, Medical Editor
rinib2@ccf.org
Taussig Cancer Institute/R35
Cleveland Clinic
9500 Euclid Avenue
Cleveland, OH 44195
Cleveland Clinic: Taussig Cancer Institute annually serves more than 28,000 cancer patients. More than 250 cancer specialists are committed to researching and applying the latest, most effective techniques for diagnosis and treatment to achieve long-term survival and improved quality of life for all cancer patients. Taussig Cancer Institute is part of Cleveland Clinic, an independent, not-for-profit, multispecialty academic medical center.

Cancer Consult Editorial Board
Brian Rini, MD, Medical Editor
Drew Raghavan, MD, PhD, Chairman, Taussig Cancer Institute
Brian Bolwell, MD, Chairman, Hematologic Oncology and Blood Disorders
Robert Dreicer, MD, Chairman, Solid Tumor Oncology
Timothy Sams, MD, Chairman, Regional Oncology
John Suh, MD, Chairman, Radiation Oncology
Gene Barnett, MD, Director, Brain Tumor and Neuro-Oncology Center
Eric Klein, MD, Head, Urologic Oncology, Glickman Urological & Kidney Institute

Managing Editor
Ann Burgo
Art Director
Michael Vans
Designer
Amy Buskey-Wood
Photography
Russell Lee, Cleveland Clinic Research Institute, Steve Texeira, Yu-Kwan Lee
Taussig Cancer Institute Administrator
Kim Bell, BSN, MBA
Marketing
Lori Schnell, RN, Bill Safin, PhD, Melissa Barnes
Cancer Consult is written for physicians and should be relied upon for medical education purposes only. It does not provide a complete overview of the topics covered and should not replace the independent judgment of a physician about the appropriateness or risks of a procedure for a given patient.

© 2008 The Cleveland Clinic Foundation 07-2498-016

clevelandclinic.org/cancerconsult
Dear Colleagues,

I am very pleased to present the first Cleveland Clinic Taussig Cancer Institute’s Cancer Consult Special Edition.

I hope you enjoy this more in-depth look at cancer care throughout Cleveland Clinic, as we continue our mission of providing innovative, high quality care through our commitment to meticulous clinical practice, augmented by a portfolio of clinical, translational and basic research. This special edition includes not only the latest research that you have come to expect in Cancer Consult, but also provides a complete overview of the cutting-edge capabilities and programs that are available at Taussig Cancer Institute.

As you will see in the pages that follow, we have had a busy year with more than 300 publications, more than 250,000 patient visits and the acquisition of many new peer-reviewed grants, contracts, inventions and increasing involvement of our patients in clinical trials.

We are very proud of our selection by the Leukemia and Lymphoma Society to develop a paradigm for moving clinical trials from a center of excellence and research to community practices. Our Community Cancer programs have been re-certified by the American College of Surgeons Commission on Cancer, and Fairview Hospital’s Breast Health Center will be the first in the nation to receive a new accreditation.

We have been very active in education, with Dr. Rob Dreicer having served as Chairman of the Program Committee for the ASCO Genitourinary Cancer Symposium, Drs. Jaroslaw Maciejewski and Mikkael Sekeres having hosted an international meeting on Progress in Myelodysplastic Syndromes, Dr. John Suh and colleagues having conducted another successful international training course on the Gamma Knife, and our team participating in a series of post- ASCO and ASH educational meetings in the U.S. and abroad. The Moll Cancer Pavilion Annual Meeting continues to provide another forum for community physician education in Oncology, as do our regular Grand Rounds sessions that are broadcast to many sites.

I hope you enjoy this more in-depth look at cancer care throughout Cleveland Clinic, as we continue our mission of providing innovative, high quality care through our core ideology of Cleveland Clinic: “Patients First.”

Sincerely,

Derek Raghavan, MD, PhD
Chairman, Taussig Cancer Institute
M. Frank & Margaret Domiter Rudy Distinguished Chair

Introducing The Future of Healthcare
Innovative new buildings improve patient access, experience.

This fall, Cleveland Clinic is introducing the future of healthcare with the opening of the Sydell and Arnold Miller Family Pavilion and the Glickman Tower.

These buildings, which represent the largest construction and philanthropy project in Cleveland Clinic history, embody the pioneering spirit and commitment to quality that define Cleveland Clinic. These structures are a tangible expression of institutes, our new model of care that organizes patient services by organ and disease.

At 1 million square feet, the Miller Family Pavilion is the country’s largest single-use facility for heart and vascular care. The 12-story Glickman Tower, new home to the Glickman Urological & Kidney Institute, is the tallest building on Cleveland Clinic’s main campus. Both will help us improve patient experience by increasing our capacity and by consolidating services, so patients can stay in one location for their care.

With 278 private patient rooms, more than 90 ICU beds and a combined total of nearly 200 exam rooms and more than 90 procedure rooms, patients will have faster access to Cleveland Clinic cardiac and urological services.

Critical Care Transport
Cleveland Clinic is able to go to new lengths to transport highly complex patients, including those who are critically ill, with the addition of two medical transport jets. The aircraft went into service on July 1, 2008 and are able to reach Cleveland Clinic patients in need wherever they are, even overseas.

In the first four weeks of service, the team has traveled to six states and three continents. Critical Care Transport Team constellation is customized based on the needs of the individual patient and can serve infants, children and adults. Sophisticated communications allow for in-flight interaction with the referring doctor as well as any specialty at Cleveland Clinic. These dedicated jets join our fleet of critical care transportation vehicles, which includes mobile intensive care units and helicopters.

For more information, visit clevelandclinic.org/cct.

Dial 216.444.8302 or 800.553.5056, option 3. One call will put you directly in contact with a receiving physician to initiate transport.

For details, including a virtual tour, please visit meetthebuildings.com.

For more information, visit clevelandclinic.org/cancerconsult.
INVESTIGATIONS
“Precise localization of tumors optimizes radiation targeting while minimizing treatment to surrounding tissues,” explains John Suh, MD, Chairman of Radiation Oncology at Taussig Cancer Institute. “The Calypso system will allow us to treat less normal tissues and potentially allow for the delivery of higher radiation doses, which may be advantageous for some tumors. This should allow us to deliver more effective therapy with fewer side effects.”

Implanted transponders and global positioning technology track tumors up to 10 times per second during treatment without adding ionizing radiation. Cleveland Clinic participated in pivotal studies leading to U.S. FDA approval of the device for prostate cancer and was one of the first medical centers to employ the tracking device in patient care.

The system utilizes permanently implanted wireless transponders that track the target continuously from the start of treatment throughout all radiation sessions. These transponders are implanted by Glickman Urological Institute urologists prior to radiation therapy treatments and work in tandem with the Calypso system technology to accurately and continuously locate the tumor in the prostate during radiation treatments. The Calypso system automatically calculates the direction and magnitude of changes in prostate position, reducing patient set-up time and eliminating the subjectivity in interpretation of X-ray or ultrasound images.

“This is an exciting breakthrough. The incorporation of real-time target tracking into radiation delivery increases our confidence that the radiation is being delivered more accurately. This technology is being investigated for other sites and should contribute to treatment advances beyond prostate cancer,” says Dr. Suh.
Axitinib as a Second Line Therapy for Metastatic Renal Cell Carcinoma

Treatment options historically have been limited for metastatic renal cell carcinoma (mRCC). The availability and emergence of multiple active monotherapies in RCC has more recently resulted in the use of sequenced therapy.

At Cleveland Clinic Taussig Cancer Institute, we continue to investigate how these new therapies can best impact disease outcomes. We will soon begin enrolling patients in a Phase III trial of Axitinib (AG-013736) as a Second Line Therapy for Metastatic Renal Cell Cancer: AXIS TRIAL.

“The prospective testing of sequenced therapy in metastatic RCC is an important next step in determining how to optimally utilize these active agents and maximize patient benefit,” says primary investigator Brian Rini, MD, Taussig Cancer Institute Solid Tumor Oncology.

The study is designed to compare the Progression-Free Survival (PFS) of patients with mRCC receiving axitinib vs. sorafenib (Nexavar®) following failure of one prior system first-line regimen containing one or more of the following: sunitinib (Sutent®) bevacizumab (Avastin®) + IFN α, temsirolimus (Torisel®) or cytokine(s).

Axitinib is an orally bioavailable tyrosine kinase inhibitor, which inhibits the proangiogenic cytokines vascular endothelial growth factor (VEGF) and platelet-derived growth factor receptor (PDGF), thereby exerting an anti-angiogenic effect.

A Phase II study of single-agent axitinib in patients with cytokine-refractory mRCC showed an objective response rate (ORR) of 44.3 percent, with 21 partial responders (PRs) and two complete responders (CRs) out of 52 subjects. The median time to progression (TTP) was 15.7 months and median overall survival (OS) was 29.9 months. In similar cytokine-refractory mRCC patient populations, single-agent bevacizumab and single-agent sorafenib showed an ORR of 10 percent and 2 percent, median PFS of 4.8 months and 5.6 months, and median OS of 15 months and 19.3 months, respectively.

A second Phase II study of single-agent axitinib in patients with sorafenib-refractory mRCC showed a preliminary ORR of 23 percent and a median PFS of >7.4 months (N=62). In a subset of 14 patients previously treated with both sorafenib and sunitinib, one patient achieved a PR and the median PFS was 7.1 months.

These results suggest that axitinib may provide clinical benefit to patients with mRCC following failure of prior systemic first-line therapy.

“Axitinib is the Tiger Woods of TKIs,” Dr. Rini explains. “When Tiger is on his game, no one can touch him. Axitinib is the same in that it stands out in a field of active drugs for metastatic RCC. This trial will hopefully result in FDA approval so that metastatic RCC patients can have access to what I believe is the most active single agent in RCC.”
NIH Grants Support Reformulation of Chemotherapy Drug that May Treat Blood and Solid Cancers, as well as Other Diseases such as Sickle Cell Anemia and Related Disorders

Cleveland Clinic has received two grants from the National Institutes of Health to develop a new formulation of the chemotherapy drug decitabine (DACOGEN®) that in vitro research shows can kill cancer cells without harming normal cells.

Leading this drug development research project is Yogen Saunthararajah, MD, Cleveland Clinic Taussig Cancer Institute, Hematologic Oncology and Blood Disorders. In 2003, he was the principal investigator of a clinical study at the University of Illinois in Chicago that found decitabine might be an effective alternative medication to treat sickle cell anemia patients who do not respond to hydroxyurea, the standard drug treatment.

For years, decitabine has been used as a chemotherapy drug and is classified as a demethylation and antimetabolite agent. In the early 1980s, other researchers found decitabine had the ability to deplete the enzyme, (cytosine-5-)-methyltransferase 1, also known as DNMT1.

“DNMT1 has a context-specific function in the DNA of the cell,” says Dr. Saunthararajah. “It has a role in normal cells but the opposite role in cancer cells. When we deplete DNMT1, the normal cells proliferate. In cancer cells, however, the depletion of DNMT 1 will terminate a cancer cell after one or two cell divisions.”

Because in vitro research also shows normal cells are not adversely impacted by the depletion of DNMT1, this means decitabine has the potential of not triggering the debilitating side effects that come with traditional chemotherapy treatment.

Nevertheless, when decitabine is medically administered in high dosages, it can produce side effects in patients. Currently, the drug is given in high doses intravenously to patients with myelodysplastic syndrome (MDS).

The NIH grants, valued at about $2.6 million, will support research to develop a new formulation of decitabine that will not be toxic to normal cells, which will eliminate the debilitating side effects for patients.

“We envision that we will be able to administer the new formulated decitabine in a lower dose pill format that would be taken orally by the patient two to three times a week,” Dr. Saunthararajah explains. “Our research also will include the pharmacogenomics factors to address the influence of genetic variation of decitabine’s response in patients, the drug’s safety and efficacy and the mechanisms by which cancer cells may become resistant to decitabine.”

Additionally, the NIH grants will support collaborative research with Joseph DeSimone, PhD, of the University of Illinois, to advance molecular research of decitabine for sickle cell anemia and blood disorders related to this disease.

“We’re very excited and optimistic that decitabine may become the next breakthrough treatment for sickle cell anemia, and related diseases like thalassemia,” says Dr. Saunthararajah. “We also think it is going to be a very important drug for blood and solid cancers. Our initial work will focus on blood cancer, but in collaborating with Brian Rini, MD, Cleveland Clinic Taussig Cancer Institute Solid Tumor Oncology, we are going to demonstrate decitabine’s role in solid cancer.”

The drug development research and subsequent clinic trials are expected to take about three to five years to complete.
New Way to Assess Risks of Some Cancers, Neck and Head Tumors Discovered

Genomic researchers at Cleveland Clinic’s Lerner Research Institute may have discovered a new way to assess the risk of some people developing prostate, breast and head and neck cancers.

Alleles are members of a pair or series of genes that occupy specific positions on chromosomes. Researchers led by Charis Eng, MD, PhD, Director, Genomic Medicine Institute (GMI), identified 16 specific locations in the human genome where imbalances of alleles make a person more prone to prostate, breast and neck and head cancers.

The research focused on “germline” genes. These occur in every single cell of the body, are passed from generation to generation, and raise the risk of developing certain cancers. Alleles group in two ways: Different alleles can group at one or more locations on a chromosome, or sets of identical alleles can collect at one or more locations.

During the study, the researchers found that having sets of identical alleles at those specific 16 locations is an important marker for prostate, breast and head and neck cancers.

Researchers also found a parallel with what are called somatic cancers. These cancers are caused by genetic mutations that occur only in cancer cells and cannot be passed on. Somatic mutations elicit gene alterations until a cell turns cancerous. In the study, cancer patients who had groups of different alleles at those 16 locations on all their germline chromosomes also had corresponding identical alleles at those same locations within their tumor cells.

“The areas of inherited cancer risk and cancers that develop somatically are generally considered two separate fields,” Dr. Eng says. “Our observations link the two cancer genetics fields and are consistent with cancer as a complex genetic trait.

“By looking at specific locations for identical alleles, we could help identify people who are more predisposed to developing inherited prostate, breast and head and neck cancers,” she says. “This could be another important risk assessment tool and allow us to better manage patient care even before a disease develops.”

Dr. Eng’s co-authors are Guillaume Assié, MD, PhD, Thomas LaFramboise, PhD, and Petra Platzer, PhD, all of GMI. The research appeared in the Journal of the American Medical Association (jama.ama-assn.org/, 2008 March 26;299,1437-1445). The project was partially funded by grants from the National Cancer Institute, U.S. Department of Defense Prostate Cancer Research Program, and the Fondation de France and the Fédération Nationale des Centres de Lutte contre le Cancer. Dr. Eng is the Sondra J. and Stephen R. Hardis Chair of Cancer Genomic Medicine.
New Approaches in Treatment of Rectal Tumors

Cleveland Clinic physicians are increasingly treating benign and malignant rectal tumors with Transanal Endoscopic Microsurgery (TEM).

This minimally invasive alternative to major abdominal surgery has significantly improved survival rates and accelerated recovery. Enhanced approaches are now being used to further improve outcomes.

**Transanal Endoscopic Microsurgery (TEM)**

Transanal Endoscopic Microsurgery is identical to traditional transanal surgery in that tumors are removed through the anal canal without any incisions in the abdomen. With TEM, however, the use of stereoscopic endoscopes allows for an ultra-precise excision to ensure that the entire lesion is removed.

Daniel Geisler, MD, a colorectal surgeon in Cleveland Clinic’s Digestive Disease Institute, is a TEM advocate who says the technique has significant advantages in treating rectal and distal colon lesions. “TEM,” he explains, “spares patients the trauma of undergoing a radical procedure that may require them to wear a stoma bag. In addition, they can typically return home the day after surgery with little or no discomfort. This enables them to return fairly quickly to their normal activities.”

Very importantly, he notes, when performed by an experienced surgeon, TEM produces a lower tumor recurrence rate compared to conventional techniques. Dr. Geisler uses the procedure for the majority of benign, as well as select malignant, tumors of the rectum and distal colon.

TEM was developed in Germany in the 1980s and was quickly embraced in Europe. Widespread use in the United States, however, lagged due to the expense of the required equipment and the specialty training needed to use the equipment. Cleveland Clinic is one of only a few centers in the United States to offer TEM.

**New Enhancements**

According to Dr. Geisler, Cleveland Clinic is incorporating a number of enhancements to TEM to further improve outcomes. “We’re now treating colorectal strictures and fistulas with TEM, which is a first in Cleveland.”

“We’ve also significantly expanded our use of TEM on more difficult benign lesions of the rectum and distal colon,” he says. “For a broader range of cancers and for advanced cases, we have a multi-modality team that includes radiation oncology, medical oncology and colorectal surgery to give patients more treatment options.” Another new advance in TEM calls for removing only a portion of the rectum and doing a lumpectomy and radiation instead, similar to breast cancer treatment.
T Cell Immunotherapy for Malignant Brain Tumors

Brain tumors are the most common solid malignancy in children and certain histologic types are devastating to patients and families because current treatment is very aggressive, yet frequently not curative.

For example, therapy for medulloblastoma requires highly intensive chemotherapy and whole brain and spine radiation, but fails to achieve a cure in 35 percent of patients. Another childhood tumor, brainstem glioma, is incurable and usually fatal within one year of diagnosis.

Our translational research program is focused on strategies to stimulate and amplify an immune response against brain tumors in hopes of improving outcomes.

One problem with current therapies such as brain radiation and intensive chemotherapy is that they have major impacts on brain development in children. Consequently, brain tumor survivors often suffer from a number of life-long handicaps. This has provided a strong rationale to develop effective alternative treatment strategies. T cell immunotherapy takes advantage of the immune system’s specificity, killing the tumor cells while leaving the normal brain intact, thereby avoiding the toxicity associated with chemotherapy and radiation.

Designing a Personal Tumor Vaccine

We previously conducted two phase I clinical trials, exclusively offered at Cleveland Clinic, for adults and children with malignant gliomas. The experimental strategy was initially designed and tested using preclinical models of brain tumors in mice. The strategy was then adapted to integrate smoothly into clinical practice. The therapy involved preparation of a personalized tumor vaccine, consisting of the patient’s tumor cells, which were cultured in the laboratory, and then inactivated with radiation and mixed with a stimulatory immune hormone GM-CSF. The rationale for autologous tumor vaccines is that each tumor contains a large number of unique genetic abnormalities. The vaccine was injected under the skin in order to stimulate specialized immune cells called T lymphocytes.

The second phase of this therapy involved amplification of the immune response. The T lymphocytes were harvested from several lymph nodes near the vaccination site and were stimulated in the laboratory for eight days. This caused the number of T cells to increase 40- to 100-fold. The patient’s activated immune T cells were then infused intravenously as outpatient therapy. The immunotherapy did not cause any toxicity and several patients (approximately 25 percent) had clinical and radiographic response. The results of these clinical trials were published in the Journal of Neurosurgery 1 and Clinical Cancer Research.2 The data obtained from these clinical trials also provided important information that guided our efforts to improve the approach.

Increasing Vaccine Potency with Electrofusion

Recent efforts have improved two fundamental aspects of brain tumor immunotherapy. First, we have been able to dramatically increase the potency of the tumor vaccine through a process called electrofusion. Cleveland Clinic pioneered the development of this procedure and we recently demonstrated that mice with advanced brain tumors can be completely cured with the electrofusion vaccine. Second, we have developed better methods to grow tumor-reactive T cells so that we can amplify their number by a million-fold. This is considerably higher than in our previous studies, which achieved a maximum of 100-fold amplification. The advantage of this approach is that the
patient’s T cells can be activated and grown in optimal conditions in the laboratory protected from immunosuppression caused by the tumor or side effects of other cancer treatments. Moreover, sufficient numbers of cells will now be available for repeated infusions to sustain the therapeutic response.

Our current research program is devoted to studying whether immunotherapy for brain tumor patients can be improved by preparing a vaccine using progenitor “stem” cells from the tumor. The reason to use the brain tumor stem cells in the vaccine is that they are a small percentage of the tumor cells that are highly resistant to chemotherapy and radiation and can migrate away from the tumor, thereby thwarting current therapy. This translational research program has shown promise in initial preclinical laboratory studies.

Gregory Plautz, MD, is Chair of the Department of Pediatric Hematology/Oncology at Cleveland Clinic. His research interest is development of cancer immunotherapy using tumor-specific T lymphocytes.

References:

Suggested Reading
Chronic Leukemia in the Spotlight

An interview with Matt Kalaycio, MD, Hematologic Oncology and Blood Disorders, Taussig Cancer Institute.

Q: What is the most state-of-the-art development in the treatment of chronic leukemia today?

A: Chronic leukemia is typically classified as either myelogenous, CML, or lymphocytic, CLL. Treatment paradigms have changed dramatically for CML and are likely to change in the near future for CLL. Until recently, CML was typically treated by transplantation from matched donors in younger patients who could tolerate it. But, the advent of imatinib mesylate (Gleevec®) effectively transformed the treatment of CML.

Today, imatinib mesylate, a specific inhibitor of the BCR/ABL tyrosine kinase, is the treatment of choice and has supplanted bone marrow transplant as an initial therapy. We reserve transplant for those patients for whom imatinib mesylate no longer works. Other drugs do exist for those who fail initial treatment, but they are less well understood — and most people do quite well on imatinib mesylate.

Taussig Cancer Institute participated in the original trial (IRIS trial) that led to imatinib mesylate’s U.S. FDA approval. We also took part in a subsequent dose finding trial, the Tyrosine Kinase Inhibitor Optimization and Selection Study (TOPS), results of which were recently reported at the 13th Congress of the European Hematology Association in June.

Q: What were the results of the TOPS study?

A: This phase III trial examined the efficacy of imatinib mesylate 800mg daily in newly diagnosed, previously untreated CML patients versus 400mg daily, the current standard dose. The study, which included 103 study sites from 19 countries, reported that a starting dose of 800mg daily results in molecular remissions quicker than with the standard dose of 400mg daily. The study also suggested that the higher dose may be particularly helpful for those patients with more advanced disease at diagnosis. Further analyses will be conducted to fully understand the benefits of high dose imatinib.

At Taussig, we are also currently participating in a trial of imatinib vs. nilotinib (Tasigna®), a second generation tyrosine kinase inhibitor. Overall, these drugs have really revolutionized the way we treat CML. Now, it’s mainly outpatient treatment — it’s not how it used to be with transplant.
Q: But this is not the case in all types of chronic leukemia?

A: No. In contrast, there’s chronic lymphocytic leukemia, or CLL. This is actually the most common leukemia in adults, with about 10,000 new diagnoses each year in the United States.

CLL comes in two flavors — there’s the slow-progressing form that half of patients have, which may not require treatment. The other half of CLL patients have a more aggressive form that does initially respond to treatment, but always relapses with time. We can’t cure CLL, so we try to relieve symptoms and prolong remissions as long as we can.

Now, what’s interesting about CLL is that there are multiple therapies and newer therapies but we’re not clear on which ones to start with and how to mix and match them. We’re still learning that. That is the focus of my current research: using the new drugs, using them in combination and trying to figure out where along the disease process these drugs should be introduced.

Q: What trials with these CLL drugs are now under way at Taussig?

A: In the past, we’ve worked with colleagues at Memorial Sloan-Kettering in a clinical trial that combined the drugs pentostatin (Nipent®), cyclophosphamide (Cytoxan®), and rituximab (Rituxan®) (PCR) in patients with relapsed CLL and found good results that prompted that same regimen to be used in newly diagnosed patients. PCR is a viable treatment option, although it’s not the standard of care.

More recently, we’re interested in novel agents. We’re exploring the role of a new drug called bendamustine (Treanda®). This purine analog/alkylator hybrid drug has been recently approved by the U.S. FDA, but no studies have used it in CLL in the United States — all of the data comes from European studies, some of which aren’t even published yet.

As Cleveland Clinic CEO Dr. Toby Cosgove has encouraged us to take “innovation trips” to learn new techniques, I went to Germany last year to learn how to use bendamustine at the German CLL Study Group in Cologne. I’ve leveraged that experience into a clinical trial that will combine bendamustine with another CLL agent known as alemtuzumab (Campath®). The trial, for which I am the primary investigator, is called “A Phase I Trial of Bendamustine Plus Alemtuzumab for the Treatment of Relapsed and Refractory CLL” and is now enrolling patients.

I have also proposed a study to the Southwest Oncology Group combining bendamustine with rituximab. So, overall, I’m focusing on monoclonal antibody combinations with bendamustine. This fall, a former fellow of ours who is from Germany will also be joining our staff to help me with these efforts, and also my work with multiple myeloma.
Genetic Mutations Alone May Not Increase Risk of Developing Cancer

Genetic mutations alone may not increase a patient’s risk for developing certain cancers. Cleveland Clinic research led by Charis Eng, MD, PhD, Chair of the Genomic Medicine Institute, found that some genes may need enablers — or little helpers — that increase a patient’s risk of developing cancer.

The study team identified two enablers involved in the growth of cancer. This finding could lead to the discovery and development of diagnostics and preventative care for people with certain genes. The enablers are tiny parts of human DNA called microRNA (miRNA) that appear to play a role in “turning off” tumor-fighting genes. When these genes are turned off, cells are more likely to grow uncontrollably and cause cancers.

“These miRNA may serve as biomarkers that signal the possibility of development of specific disease features,” Dr. Eng says. “We think that by understanding how miRNAs and the chromosomal gene mutations talk to each other, we are one step closer to predicting precisely what cancers develop and therefore personalizing healthcare.”

Dr. Eng’s research found that two specific miRNAs — miR-19a and miR-21 — are associated with deactivating the tumor-suppressing gene PTEN. PTEN is a tumor suppressor that is involved in several types of cancer, as well as in Cowden syndrome. Cowden syndrome is an under-diagnosed heritable disorder associated with an increased risk of developing breast, thyroid and uterus cancers. In the first patient-oriented study of the two miRNA, Dr. Eng’s group found that the levels of these miRNAs are correlated to the amount of PTEN protein the cell produces.

For more information, email cancerconsult@ccf.org.
Whole Genome Scanning Significantly Increases Detection Rate of Chromosomal Defects Detection and May Improve Assessment of Prognosis and Application of Targeted Therapies

Various cytogenetic methods have been developed to detect acquired chromosomal defects. Because of their prognostic and often diagnostic utility, these methods have become part of standard laboratory tests providing valuable clinical information for many blood disorders, including leukemias. In addition, karyotypic aberrations help uncover the molecular pathogenesis of diseases leading to identification of rational targets for molecular therapies.

Even though progress in this field originates from metaphase cytogenetics (MC), the novel molecular technology of whole genome scanning complements routine cytogenetics and addresses its limitations. Whole genome scanning technology is based on gene chips that enable researchers to scan up to millions of gene fragments at once to detect inherited genetic variants and acquired defects in chromosomes. Because of their precision, ability to automate and speed, gene arrays have the potential to revolutionize cytogenetic diagnostics and improve the understanding of disease mechanisms needed for the development of new treatments.

The technologies of whole genome scanning, such as comparative genomic hybridization and single nucleotide polymorphism array, are coming of age and are being increasingly introduced into diagnosis and clinical management of various forms of blood cancers, according to an editorial written by Jaroslaw P. Maciejewski, MD, PhD, Chief of the Section Experimental Hematology and Hematopoiesis at Cleveland Clinic’s Taussig Cancer Institute.

The editorial titled “Whole Genome Scanning as a Cytogenetic Tool in Hematologic Malignancies,” appeared in the May 27, 2008 edition of Blood. Dr. Maciejewski co-authored the editorial with Ghulam J. Mufti, MD, professor at the Department of Haematological Medicine, King’s College Hospital, King’s College London School of Medicine. As collaborators, Drs. Maciejewski and Mufti have published extensively on the applications of whole genome scanning in the study of hematologic cancers.

The authors explain whole genome scanning – using either CGH or SNP-arrays (two competing technologies) — is important because it detects new, previously cryptic chromosomal aberrations, including somatic uniparental disomy (UPD), a new type of genomic lesion, which cannot be detected by standard testing technologies.

For example, in a study of patients with myelodysplastic syndrome or myelodysplasia-derived acute myelogenous leukemia, SNP-A-based cyrogenetic testing allowed for the identification of clonal defects in 87 percent of patients. In addition, UPD of various chromosomes was found in 23 percent of all patients. Most important, however, is that additional chromosomal defects found by this new technology conveyed clinically important information, and allowed for more precise prognosis in patients with normal metaphase cytogenetics and those in whom additional lesions were found, according to a report from Dr. Maciejewski’s group entitled “Chromosomal lesions and uniparental disomy detected by SNP arrays in MDS, MDS/MPD and MDS-derived AML,” published in Blood February 2008, 111:534-42.

Whole genome scanning is truly amazing 21st century technology, Dr. Maciejewski remarks, because it allows us to instantly study cancer genes in a way that previously would have required years of experimentation. This technology is likely to help identify genes that are affected by mutations responsible for the evolution of malignant clones.

“Whole genome scanning technology has ushered in a new era of detection of genomic defects in malignant diseases and has led to a markedly increase resolution of karyotyping,” the authors conclude. “It is likely that this technology will be introduced into the clinical practice to complement MC.”
Translating Discoveries into Improved Patient Care

It’s a long and winding road to take lessons from the laboratory and turn them into therapies for cancer patients.

It can take several years, if not more than a decade, for the first hint of an idea by a laboratory-based researcher to find its way into a clinical trial. And that’s for ideas with merit — and sufficient funding. For each observation that results in a clinical trial, there are countless projects that end up by the wayside.

When it comes to translating laboratory observations into clinical trials and patient care, Cleveland Clinic has an edge in that many of the pieces of successful translational research programs are already here. The key is ensuring that the pieces come together.

A case in point is the emerging colorectal cancer research program under the supervision of Janet Houghton, PhD, Chair, Cancer Biology. Colorectal cancer is the third most common cancer and the third leading cause of cancer-related deaths in the country. The National Cancer Institute estimates 153,760 new cases will be diagnosed and 52,180 people will die this year.

When Dr. Houghton arrived at Cleveland Clinic in 2006, she found extensive resources perfect for a translational colorectal cancer research program: outstanding basic science, anatomic pathology, a leading colorectal surgery department, outstanding clinical oncology capabilities at the Taussig Cancer Institute, and additional regional medical and research facilities, such as Case Western Reserve University.

All that was needed was a fresh perspective and someone to act, as Dr. Houghton describes it, as a funnel — collecting the wealth of ideas and observations from laboratory researchers, sifting and filtering them to find the leads that hold the greatest promise, and directing them through the translational program.

“The only thing missing here for a translational colorectal program was a funnel person. I guess I’m that funnel person,” she says. “They just needed someone to get them together.” A sense of collaboration among scientists and clinicians hasn’t always been the case. Not all that many years ago, medical professionals generally fell into two general camps — basic researchers (the people investigating the genetic and molecular causes of diseases — the ones with the microscopes) and clinicians with daily patient care and clinical trials to test new therapies. The two camps didn’t always work in unison.

Early in her career, Dr. Houghton saw the merits of translational research — that process of laboratory and clinical professionals working together — during her tenure at St. Jude Children’s Research Hospital in Memphis, Tenn.

“What I was doing 20 years ago wasn’t viewed as very trendy,” she says. “You had molecular biologists whose sole interest was getting published in the most prominent journals. But we’re advancing. To make progress in colorectal cancer, it has to be a team approach. The field of biology has exploded in the past 20 years, and with technological advances and increasingly specialized fields, that’s where we’re at today, a team approach with the goal of making significant advances in treatment.”

Paul E. DiCorleto, PhD, Lerner Research Institute Chairman, sees the spirit and environment for translational research as one reason for its success. “Our scientists work hand-in-hand with
Cleveland Clinic clinicians to rapidly move discoveries in the laboratory to the patient. We represent what the National Institutes of Health’s Roadmap envisions as the future of biomedical research in the United States,” he says.

Today, in addition to Dr. Houghton, among the key colorectal cancer research players are Philip Howe, PhD, Nywana Sizemore, PhD, and Taolin Yi, PhD, all of the Department of Cancer Biology; John Goldblum, MD, and Mary Bronner, MD, of Anatomic Pathology; Charis Eng, MD, PhD, Chair of the Genomic Medicine Institute; Ernest Borden, MD, Director of the Center for Hematology and Oncology Molecular Therapeutics in the Taussig Cancer Institute; Robert Pelley, MD, Sujith Kalmadi, MD, Richard Kim, MD, and Daniel Lindner, MD, PhD, all of the Taussig Cancer Institute; and Li Li, MD, PhD, and Sanford Markowitz, MD, PhD, from Case Western Reserve University.

Coordinating the “A to Z” of colorectal cancer research may be under way, but that doesn’t mean success will be easy — or fast.

“Any translational cancer research program still faces a number of challenges,” Dr. Houghton says. “Scientists identify many, many signaling pathways that might be involved in a variety of cancers. But first we have to find the right targets that appear to be the most promising, and then we have to develop the protocols and tests to see if a new approach or therapy might work. For example, one concept I had in 1996 commenced Phase I trial in 2000 and currently is in Phase II testing at West Clinic, Memphis. We now plan to build on this in collaboration with my clinical collaborators at the Taussig Cancer Institute.”

“Adding further complications, each cancer has its own signaling pathways and genetic or environmental causes,” she says. “Each disease is different. What might be a good target in one might not be a good target for another.”

Another challenge is the clinical trials themselves — when a possible therapy is actually used on human patients to see if it is safe and will work as envisioned. “That’s a very important issue: How do you evaluate a new approach clinically without compromising the current standard of care? It’s one that translational researchers deal with all the time,” Dr. Houghton says.

Although realistic about the challenges and obstacles facing any translational cancer research program, Dr. Houghton is optimistic about the prospects for the colorectal cancer program. “I really do think we’ll make great progress. I think we’ll reduce the incidence rate of colorectal cancer and have better therapies that increase survivability for people who do develop it.

“Cleveland Clinic lends itself to translational research because of the willingness of physicians and scientists to work with each other,” she says. “It’s quite unique.”
Prostate Mono Brachytherapy is an Effective Treatment Option for Low Intermediate Risk Gleason 7 Prostate Cancer

Prostate mono brachytherapy (PMB) is an accepted treatment option for Gleason 6 cancer. Its popularity has increased as more 10-year data is being reported regarding its efficacy in Gleason 6 cancers. Short and the long-term data demonstrate biochemical progression free survival rate ranging from 81 to 98 percent,1-3 results that compare favorably to radical surgery.

While excellent results are reported with Gleason 6 cancers, a lot of controversy exists regarding the management of Gleason 7 tumors because of their heterogeneous nature. The American Brachytherapy Society (ABS) recommends Gleason 7 cancer as a cut point for the addition of external beam radiation when using permanent prostate brachytherapy.4 However, Potters et al in 2003 was the first to report that prostate mono brachytherapy can be an acceptable treatment for patients with Gleason pattern 3+4.5 At our medical center, we have observed that younger patients with Gleason 7 tumors with concerns of erectile dysfunction often elect to undergo prostate mono brachytherapy. In exploring the efficacy of this treatment option, we did a retrospective analysis of our Glickman Urological database. Our hypothesis was that prostate mono brachytherapy was an accepted treatment option for selected low intermediate risk Gleason 7 cancers.

We identified 61 patients from the Glickman Urological and Kidney Institute database (1997-2003), that had a minimum follow up of four years who underwent PMB for a Gleason 7 cancer. We compared it to 56 patients with Gleason 6 cancer from the author’s personal series in the same time period. We subdivided the Gleason 7 cancers into Gleason 7 (3+4) and Gleason 7 (4+3). In our Gleason 7 group, we found 48 patients had Gleason 3+4 cancer and 13 had Gleason 4+3 cancer. The mean age of the patients with Gleason 6 cancer was 65 years; with Gleason 7 (3+4) - 68.2 years; with Gleason 7 (4+3) - 71 years. The mean baseline PSAs were comparable; Gleason 6 - 6.67; Gleason 7 (3+4) - 6.78; Gleason 7 (4+3) - 6.4. In the Gleason 6 group, the mean PSA at four years was 0.18±0.20 with a 3.5 percent biochemical failure rate (ASTRO). In the Gleason 7 (3+4) group, the mean PSA at four years was 0.16±0.17 (p=0.56 vs. GS 6) with a 6.2 percent biochemical failure rate. In the Gleason 7 (4+3) group, the mean PSA at 4 years was 0.70±0.74 (p=0.07 vs. GS 6) with a 23 percent biochemical failure rate (see Table). Overall, the four-year nadir PSA value for the Gleason 7 cancers (0.30) was not different from the nadir PSA value of the Gleason 6 cancers (0.18) (p=0.78). There were three failures in the Gleason 7 (3+4) group, three failures in Gleason 7 (4+3) group and two failures in Gleason 6 - all eight failures occurring between two and three years. The small number of biochemical failures prevented statistical analysis.

Conclusions: Our data indicate that prostate mono brachytherapy is an acceptable treatment option for low intermediate risk Gleason 7 cancers. At four years, our biochemical cure rate for Gleason 7 (3+4) cancer (94 percent) was comparable to our cure rate for Gleason 6 (3+3) cancer (97 percent). Preliminary data would suggest that patients with Gleason (4+3) have a worse biochemical failure rate than those with Gleason 6 (3+3) and Gleason 7 (3+4). This data should impact positively on our selection criteria for prostate mono brachytherapy, such that low intermediate risk Gleason 7 (3+4) cancers can be routinely recommended.
**References:**


**Short and the long-term data demonstrate biochemical progression free survival rate ranging from 81 to 98 percent, results that compare favorably to radical surgery.**
Making the Inoperable Operable: Subcortical Navigation for Brain Tumors

Many new surgical techniques and radiologic advancements have aided in the success for removal of brain tumors, but few have created as dramatic and as immediate results as diffusion tensor imaging (DTI) with fiber tracking. The inoperable brain tumor, historically a diagnosis for which you can give your patient little to no hope, now needs to be reconsidered for surgery.

Since the early 1990s, Cleveland Clinic has had the ability to navigate around and in the brain to localize tumors and edema with MRI, visualizing the surface features, including the deep surfaces. With newer techniques in the last five to ten years, we have been able to apply maps of brain function to these traditional images of the brain. We could not, however, see the white matter tracts — the wiring of the brain itself — which can be distorted or involved in very unpredictable ways by brain tumors.

The development of an excellent awake craniotomy team and navigation technologies in Cleveland Clinic’s Brain Tumor and Neuro-Oncology Center has allowed us to push the envelope on what we can operate while improving the outcome. With these navigation technologies (which function like GPS for the brain), however, it was never fully known how the nearby white matter structures were involved with the tumor. We could not operate on cases too close to vital tracts or accurately predict deficits created by surgery. The use of DTI, however, makes some of these cases operable.

For the past year, we have been working with neuroradiologists from Cleveland Clinic’s Imaging Institute to incorporate the images from DTI with fiber tracking into our navigation system.

DTI, first introduced in the mid-1980s, combines the principals of nuclear magnetic resonance (NMR) imaging with directional molecular diffusion effects in the NMR signal. Molecular diffusion refers to the random translational motion of molecules that result from the thermal energy carried by these molecules. Water is the most convenient molecule to use and is measured within a specific volume. Fiber tracking is possible due to the fact that water molecules in the brain diffuse preferentially along the white matter fiber tracks as opposed to across them. The image demon-
strates the diffusion, or preferential flow, throughout the brain (see figure 1). It identifies all white matter tracks more than an inch long.

These images are then superimposed onto the high resolution MR images, which results in a combination of anatomical detail of the MRI, functional data from fMRI and the fiber tracking information of DTI. This gives a map of both tumor features and surface anatomy as well as the inner wiring around the tumor (see figure 2).

We study these images intensely before surgery to identify which fiber tracks are going around the tumor and which are involved. This allows us to operate on some tumors that previously were too risky to consider. It also allows us to more accurately predict whether postoperative deficits are likely to be temporary or permanent (see figure 3).

While the gold standard is still the functional mapping done during surgery, the combination of the fiber tracking images incorporated into the intraoperative navigation system creates an exciting new ability for the surgeon to avoid critical white matter tracks. Using these technologies for planning purposes, the types of cases that had previously been considered inoperable can now be looked at again and considered for surgery.
Locally advanced urothelial cancer (UC), variably defined as muscle invasive UC with a large or palpable mass, local extension or fixation, or lymph node enlargement, represents a challenging clinical dilemma. These patients are at high risk for systemic progression and occult micrometastasis and mandate a careful metastatic evaluation. Many are symptomatic with disabling voiding symptoms, incontinence or refractory hematuria. Hydronephrosis is common and represents yet another poor prognostic parameter, particularly if bilateral. Clinical understaging is common, with the majority having extravesical extension, substantial lymph node involvement, or other adverse pathologic findings. Aggressive histologic subtypes tend to congregate in this patient population, requiring careful pathologic review and, occasionally, alternative management strategies.

Given all of these considerations, the prognosis for patients with locally advanced UC is compromised; systemic recurrences are relatively common if managed with definitive local therapies alone, and most patients must consider a multimodal approach using either neoadjuvant or adjuvant strategies. The relative merits of these two strategies for invasive UC patients taken as a whole remain controversial; however, for locally advanced disease, in which systemic therapy is almost universally required, it is best administered prior to surgery. The neoadjuvant approach optimizes the likelihood that the patient will be able to receive all of the required treatments, and recent studies have shown that radical cystectomy is well tolerated after neoadjuvant chemotherapy with no substantial increase in perioperative complications. In addition, at cystectomy about 30 to 40 percent of patients will have no evidence of disease (pT0), which can facilitate surgery. Clearly, some highly symptomatic patients with locally advanced UC will require surgery up front to address disabling symptoms, but most are best managed with a neoadjuvant approach.

Existing randomized studies suggest that MVAC chemotherapy should be the standard neoadjuvant regimen for high-risk UC patients. However, cisplatin (Platinol®) plus gemcitabine (Gemzar®) or GC, is a reasonable alternative based on similar efficacy in the setting of metastatic disease and is associated with far less toxicity. Meta-analysis of neoadjuvant studies evaluating cisplatin-based regimens demonstrates a 6.5 percent absolute improvement in five-year overall survival. Similar robust data for the subpopulation of patients with locally advanced UC are not available, but clinical experience indicates a compelling need for novel therapeutic strategies.

We have recently initiated a neoadjuvant protocol for patients with locally advanced urothelial cancer. Patients will undergo standard radical cystectomy and bilateral lymph node dissection at the completion of an entire cycle of sunitinib (Sutent®). The primary endpoint of this study is to determine the efficacy and safety of sunitinib in the neoadjuvant setting.
Recognizing this, we have recently initiated a neoadjuvant protocol for this patient population that utilizes sunitinib, a novel oral multityrosine kinase inhibitor of VEGF-R, PDGF-R, cKIT and FLT3. The conceptual and experimental rationale for the use of this drug for patients with UC is arguably as strong as that for kidney cancer, where this drug has recently demonstrated promising results. In this protocol, patients receive sunitinib 50mg PO daily for four weeks followed by two weeks off (one cycle). Patients will undergo standard radical cystectomy and bilateral lymph node dissection at the completion of the entire cycle of sunitinib (Day 42 +/- 2). The primary endpoint of this study is to determine the efficacy and safety of sunitinib in the neoadjuvant setting. Clinical activity is defined as the rate of pathological complete responses observed. Early experience has been provocative with some pathologic downsizing observed. In addition to efficacy, this experience also will be closely monitored for systemic and surgical safety, a relevant concern given that VEGF targeted agents might theoretically affect wound or anastomotic healing as well as vascular integrity.

For references, please email cancerconsult@ccf.org.
Despite improvements in surgical techniques and multimodal therapy, five-year survival rates for patients with muscle-invasive bladder cancer remain suboptimal. Almost 50 percent of patients will eventually progress and develop systemic disease. Although various single chemotherapeutic agents have shown activity in patients with advanced or metastatic disease, randomized trials have demonstrated the utility of cisplatin-based (Platinol®) combinations regimens. Despite relatively high objective response rates, the impact on survival in patients with advanced disease has been quite limited.

Significant progress in understanding the biology of bladder cancer has led to the identification of the vascular endothelial growth factor (VEGF) and platelet derivative growth factor (PDGF) as key mediators of angiogenesis, tumor growth and proliferation. Several authors have reported a positive correlation between tumor stage, cancer progression and tumor vascularity. Significant differences in VEGF serum level and angiogenic activity between healthy controls and patients with bladder cancer also have been identified.

High VEGF and PDGF expression are closely associated with muscle-invasive disease as compared to non-muscle-invasive papillary tumors. As a result, inhibition of VEGF and PDGF signaling pathways in bladder cancer patients may lead to enhanced anti-tumor activity, alone or in combination with established chemotherapy regimens. Early animal studies utilizing different anti-VEGF strategies have shown to inhibit tumorigenesis, angiogenesis, and metastasis of bladder cancer. These initial studies, coupled with the availability of known active anti-angiogenic agents, support the rationale for targeting the VEGF and PDGF pathways in bladder cancer.

To date, three agents capable of blocking VEGF and/or PDGF at different levels are undergoing clinical testing in bladder cancer. Bevacizumab (Avastin®), a recombinant human monoclonal antibody against VEGF that binds and neutralizes all biologically active isoforms of VEGF, is undergoing phase II testing in patients with advanced disease in combination with gemcitabine and cisplatin.

An alternative approach to VEGF inhibition involves small-molecule tyrosine kinase inhibitors. These agents inhibit not only the VEGFR, but also other receptors in the tyrosine kinase superfamily, such as PDGFR.

Sorafenib (Nexavar®) is an oral Raf kinase inhibitor. Activated Ras promotes cell proliferation through the Raf/MEK/ERK pathway by binding to and activating Raf kinase. Sorafenib also has demonstrated direct inhibition of VEGFR and PDGFR. Unfortunately, minimal clinical activity has been observed when sorafenib is administered as a single agent in chemotherapy-refractory advanced bladder cancer.

Sunitinib (Sutent®) is an oral multi-tyrosine kinase inhibitor of VEGFR and PDGFR. In vitro assays have demonstrated inhibition of VEGF-induced proliferation of endothelial cells and PDGF-induced proliferation of mouse fibroblast cells.
Investigation in mouse xenograft models demonstrated growth inhibition of various implanted solid tumors and eradication of larger, established tumors. Contrary to sorafenib, clinical activity has been observed when single agent sunitinib is administered in chemotherapy-refractory as well as in untreated advanced bladder cancer patients unable to receive cisplatin-based chemotherapy. Currently there are minimal data concerning potential tumor tissue effects of antiangiogenic agents and the impact these novel agents might have in patients with non-invasive and locally advanced bladder cancer. Thus, two phase II studies evaluating sunitinib in these two cohorts of patients are under way at Cleveland Clinic. The first study evaluates the activity and safety of one cycle of sunitinib administered at 50 mg orally given daily for four weeks followed by two weeks off (one cycle) in patients with muscle-invasive locally advanced disease who are scheduled to undergo radical cystectomy. The second trial has been directed to patients with superficial BCG-refractory bladder cancer in the hope that sunitinib can delay progression and avoid radical cystectomy. In this study, patients receive three cycles of continuous sunitinib at 37.5 mg orally for 12 weeks. Immediately after treatment, patients achieving clinical complete responses will continue standard surveillance as per American Urological Association guidelines.

Clinical trials of targeted agents have come late to bladder cancer, but are finally under way. The recent paradigm shift in the therapeutics of renal carcinoma provides a window of hope that the next decade will see the integration of novel and effective “targeted” agents into our armamentarium, allowing for real progress in the management of this aggressive cancer.

For references, please email cancerconsult@ccf.org.
The initial phase II study in pancreatic cancer suggested a dose-dependent improvement over expected outcomes (progression and survival). There were even some patients whose tumors were downstaged to allow surgical resection. One patient had a complete pathological response. This initial encouraging data require further validation in a phase III randomized trial.

Tyler Stevens, MD, Department of Gastroenterology, Digestive Disease Institute, Robert Pelley, MD, Department of Solid Tumor Oncology, Taussig Cancer Institute, and Roger Macklis, MD, Department of Radiation Oncology, Taussig Cancer Institute are involved in the phase III multi-center study of TNFerade injection for treatment of locally advanced (Stage III) pancreatic cancer.

TNFerade™ is a new “gene therapy” agent designed to be injected directly into solid tumors to produce tumor-cell death. It is a replication-deficient adenovirus which contains the tumor necrosis factor alpha (TNF) gene. The TNF gene is linked to a radiation-inducible promoter gene so that it produces synergistic expression of TNF in the presence of radiation.

A multidisciplinary approach is necessary for patients to receive the new treatment (five weekly EUS-guided TNFerade injections) and the standard care treatments (5-FU/external beam radiation induction, Gemcytobine maintenance). In 2007, three patients were enrolled in the study.

“It is hoped that this and other EUS-delivered anti-tumor treatments may hold promise in improving the outcome of this deadly disease,” Dr. Stevens says.

For more information, email cancerconsult@ccf.org.
Hyperthermia is a non-invasive method of increasing tumor temperature to stimulate blood flow, increase oxygenation and render tumor cells more sensitive to radiation. By adding hyperthermia to radiation therapy, radiation oncologists can increase local tumor control while minimizing damage to healthy tissue. Hyperthermia helps address the limitations of radiation for many patients by effectively increasing the radiation dose without a concomitant increase in unwanted side effects.

For many cancer patients who experience recurrence, the prognosis is extremely bleak. A second full course of radiation therapy usually is not viable due to the high risk of damage to healthy tissue. Clinical evidence suggests that hyperthermia can, in some cases, allow radiation to be delivered a second time with greater effect on cancer cells, without creating greater complications than radiation alone. While hyperthermia can be used in combination with first line therapies to treat primary tumors, the ability to increase the effectiveness of radiation on re-treatment offers new hope for patients with recurrent cancers.

Hyperthermia is used to treat tumors located within a few centimeters of the surface of the body, such as melanoma or recurrent breast cancer. Hyperthermia also can be delivered interstitially which is useful in treating tumors of the prostate, breast, head and neck, and a variety of other superficial lesions.
At Cleveland Clinic Taussig Cancer Institute, more than 250 cancer specialists, scientists, nurses and technicians are developing and applying the most effective medical techniques to achieve the long-term survival and improve the quality of life for 7,500 new cancer patients every year.

Because of our patient-centered care, leading-edge treatments, innovative research, 350 clinical trials and state-of-the-art medical technologies, U.S. News & World Report has ranked Taussig Cancer Institute one of the top cancer centers in the nation as well as having top rankings in digestive disorders, respiratory diseases, geriatrics, urology and neurology.

To meet the growth demands of Cleveland Clinic’s cancer care practice, the largest in Northeast Ohio, the 165,000-square-foot Taussig Cancer Institute was dedicated in 2000. The Institute is not only a major cancer care center, but it also houses and operates a research laboratory. This environment enables multidisciplinary cancer specialists and research scientists to develop new therapies and apply their benefits more rapidly to cancer patients. More than 26,000 cancer patients receive treatment at the Cleveland-based Taussig Cancer Institute and at 10 locations throughout Northeast Ohio.

**Pioneering Cancer Care**

Taussig’s cancer experts, who work in dozens of specialties and subspecialties, are pioneers and early adopters of medical technologies and techniques that continuously improve outcomes and quality of life for patients. For example, Taussig is the only cancer care center in Ohio to offer the Calypso 4D Localization System, a radiation targeting technology that works like a GPS system precisely killing cancer cells and minimizing side effects.

Our Center for Personalized Genetics Healthcare specializes in the evaluation of families who are at high risk of developing cancer. The Center’s goal is to prevent cancer by identifying individuals who have a high risk for developing the disease and offering personalized medical management to them and their family members.

For patients 60 or over, our Geriatric Oncology Clinic can provide specialized assessments designed to identify and manage problems related to a cancer diagnosis and treatment that may otherwise be overlooked. Our goal is to improve the patient’s quality of life, offer reassurance to their family and make informed health care decisions.

**Clinical Expertise**

One day at a time, our clinical teams of experts are helping patients survive many forms of cancer.

“A pivotal strength of the Taussig Cancer Institute is our approach to cancer care,” says Derek Raghavan, MD, PhD, Chairman, Cleveland Clinic Taussig Cancer Institute. “We fuse high quality treatments with the latest in research, never forgetting the importance of our patients and their families. We pull this all together every day to make Taussig Cancer Institute one of the best cancer care centers in the U.S.”
Brain and Spinal Cord Tumors
The Brain Tumor and Neuro-oncology Center has the most advanced Gamma Knife technology. Combined with our medical expertise, the Gamma Knife provides the best non-surgical treatment for patients with a wide range of brain tumors including brain metastases, which afflicts nearly a quarter of cancer patients. Our Gamma Knife Center has performed more than 2,500 procedures.

Breast Cancer
Working closely with Taussig’s cancer specialists, Cleveland Clinic Breast Center’s team of professionals use innovative therapies for breast cancer, including treatment that may reduce the risk of onset or progression of the disease. The Center also offers patients the latest treatments for breast cancer, including minimally invasive techniques and reconstructive surgery performed alone or together with therapeutic cancer surgery and precision-targeting radiation.

Colorectal Cancer
Our five-year survival rates for each stage of colon cancer are among the nation’s best. Cleveland Clinic’s colorectal surgeons pioneered the “no touch” technique that prevents the accidental spread of cancer cells during colorectal surgery. What’s more, our surgeons are among a few in the Midwest performing transanal endoscopic microsurgery, an incision-free method of removing polyps and selected cancers in the colon and rectum.

Gastrointestinal Cancer
Patients with cancers of the esophagus, gall bladder, liver, pancreas and stomach are treated by multidisciplinary teams of medical oncologists, surgeons, and radiologists who work closely with specialists from our renowned Digestive Disease Institute. Our cancer specialists were among the first in the nation to offer radiofrequency thermal ablation for patients with liver metastases.

Endocrine Cancer
Our endocrine cancer specialists work in multidisciplinary teams that treat cancer of the thyroid, parathyroid and adrenal glands and pancreas. In addition to managing difficult cases, Cleveland Clinic’s program performs about 500 endocrine surgical procedures annually, the largest in Ohio and the six surrounding states.

Head and Neck Cancer
To preserve speech and swallowing function as well as head and neck structure, cancer experts use the least invasive and most effective treatments. For advanced head and neck cancers, innovative chemotherapy and combined chemotherapy-radiation therapy regimens are used. Taussig Cancer Institute experts helped pioneer a flexible robotic laser for throat surgery and novel cryosurgery/laser approach for early-stage larynx cancer.

Blood and Bone Marrow Cancer
Taussig Cancer Institute oncologists are internationally recognized for their achievements in treating hematologic cancer. Our Multiple Myeloma Clinic is one of the only clinics in the world devoted to treating patients with bone marrow cancer and has the nation’s best outcomes. In addition to operating one of Ohio’s largest leukemia treatment programs, our Bone Marrow Transplant Program has unsurpassed national outcomes.

Urologic Cancer
Cleveland Clinic urologists perform more than 22,000 surgeries offering leading-edge treatments for kidney cancer, including open and laparoscopic techniques for partial nephrectomy, renal cryoablation and radiofrequency ablation. In addition, innovative treatments including targeted therapies, immunotherapy, image-guided radiation therapy and robotic surgery are among the latest therapies to treat prostate cancer.

Lung Cancer
Taussig Cancer Institute’s Lung Cancer Program brings together the expertise of specialists in medical oncology, radiation oncology, thoracic surgery, pulmonary medicine and pain management to deliver customized treatment
plans for every patient. Advanced treatments include Gamma Knife radiosurgery, novel experimental drugs and radiation protocols, a colorimetric sensor array system, implantable intrathecal pumps, and combined PET-CT imaging and video-assisted thoracoscopy.

**Musculoskeletal Cancer**
Our medical and radiation oncologists, surgeons, pathologists, nurse practitioners, physiatrists and social workers work together in Cleveland Clinic’s Multidisciplinary Sarcoma and Bone Metastasis Clinic to evaluate patients and determine a comprehensive course of treatment. These treatment recommendations are designed for adults and adolescents with all types of soft-tissue sarcomas and osteosarcomas.

**Ophthalmic Cancer**
Our cancer experts offer surgical options, as well as chemotherapy and radiation therapy for patients. Specialized procedures such as thermotherapy and brachytherapy are also available.

**Skin Cancer**
Specialists in dermatology, medical oncology and pathology, and plastic surgery provide the latest treatments including Mohs surgery, an advanced treatment for skin cancer that ensures cancer is removed down to its roots. Cryosurgery (freezing the tumor), drugs, chemotherapy, biological response modifiers, laser therapy and radiation therapy also are used by our multidisciplinary teams. Our researchers are continuously developing new and effective therapies, such as immune-and biologic-based treatments.

---

**CME and Custom Learning Opportunities**

For more information, including a list of international programs and online CME topics, please call the Cleveland Clinic Continuing Education Department at 800.238.6750 or visit clevelandclinicmeded.com/cancered.

To arrange an in-house, custom presentation by one of our staff, email rainesm@ccf.org.

**ASTRO Review**
October 22, 2008
Embassy Suites
Independence, Ohio

Target audience: radiation oncologists, medical oncologists, hematologists, physicists, nurses

**8th Annual Multidisciplinary Genitourinary Oncology Course**
November 13, 2008
InterContinental Hotel
Cleveland, Ohio

Target audience: medical oncologists, urologists, radiation oncologists, pathologists, nurses

**American Society of Hematology Satellite Symposia**
**Bone Marrow Failure Syndromes: Optimizing Outcomes Worldwide Through Disease Understanding**
December 5, 2008, 6 p.m.
Moscone Center West
San Francisco, Calif.

Target audience: medical oncologists, hematologists, clinical and translational researchers, allied health care professionals

**Lung Cancer 2009: Up for Debate**
April 18, 2009
InterContinental Hotel
Cleveland, Ohio

Target audience: medical oncologists, radiation oncologists, thoracic surgeons, pulmonologists, nurses
Clinical Achievements & Innovations

New Gamma Knife Technology
The next generation of Gamma Knife®, known as Perfexion™, is up and running at Cleveland Clinic’s Gamma Knife Center. Under the leadership of John Suh, MD, chairman of Radiation Oncology at Taussig Cancer Institute, the Neurological Institute’s Gamma Knife Center is the only site in Ohio to have the improved device. Used to treat head and skull abnormalities, the Gamma Knife can focus 192 high-energy beams on a small target with minimal or no harm to surrounding tissue.

Largest Experience with Partial Nephrectomy
Andrew Novick, MD, and Inderbir Gill, MD, of the Glickman Urological & Kidney Institute, reported in the *Journal of Urology* the largest experience in the world with open surgical and laparoscopic partial nephrectomy (organ-preserving surgery) for treatment of kidney tumors.

Leading Work in Targeted Therapeutics
In recent years, Taussig Cancer Institute has led the nation in developmental work on tyrosine kinase inhibitors, with studies led by Ron Bukowski, MD, and Brian Rini, MD, leading to approval for Sunitinib (Sutent®) and several tyrosine kinase inhibitors and targeted therapeutic agents for kidney cancer. Tom Budd, MD, led a team that demonstrated the utility of circulating tumor cell assays in prognostication and prediction of outcomes in breast cancer, and studies by Derek Raghavan, MD, showed similar results in advanced prostate cancer. Our investigators also have been very active in developing new agents for patients with bladder cancer and prostate cancer, two of the most common cancers in our community.

Lung Cancer Trials
Innovative programs in lung cancer, under the leadership of Tarek Mekhail, MD, Hardis Chair in Thoracic Oncology Research, and senior radiation oncologist, Greg Videtic, MD, have made Taussig the leader in accrual to radiation trials for lung cancer conducted by the U.S. Radiation Therapy Oncology Group.

Non-invasive Diagnosis of Lung Cancer using “Electronic Nose”
A Cleveland Clinic team of pulmonologists and oncologists evaluated the ability of gaseous chemical sensing devices to detect lung cancer by analyzing exhaled breath. Prior study has suggested the pattern of chemicals in the breath, or volatile organic compounds, may be unique in individuals with lung cancer. Using a carbon polymer system, our study results support the potential for breath analysis to be developed into a useful diagnostic test for lung cancer, confirming previously performed work by us and others. We hope to learn more about the unique constituents of the breath of subjects with lung cancer and develop analysis systems that accurately screen for, and diagnose, lung cancer in a noninvasive manner.

Esophagectomy for Superficial Cancer
Esophagectomy remains one of the most challenging of general thoracic operations. Cleveland Clinic’s experience with this procedure leads to shorter LOS for patients.

Patients with superficial esophageal cancer generally underwent resection without a chest incision (transhiatal esophagectomy) in 2007.
Selected Cleveland Clinic Cancer Clinical Trials

In addition to our participation in 350 clinical trials for qualifying patients, Cleveland Clinic Taussig Cancer Institute is at the forefront of the cancer drug discovery and development revolution. Through our cancer research projects led by some of the world’s leading scientists, we have identified new molecules with anti-tumor effects, which may lead to new drug therapies. Key collaborative relationships with the world’s top biotech firms, university research labs, renowned scientists and major health organizations enhance our research initiatives at Taussig.

**Bladder Cancer**

Randomized Phase II Trial of Maintenance SU011248 Versus Placebo Post Chemotherapy for Patients with Advanced Urothelial Carcinoma

Principal Investigator: Robert Dreicer, MD
Contact: 216.445.4623

Phase II Single Arm, Open Label, Single Institution Study of Neoadjuvant Sunitinib (Sutent®) in Patients with Muscle-Invasive Locally Advanced Transitional Cell Carcinoma of the Bladder

Principal Investigator: Jorge A. Garcia, MD
Contact: 216.444.7774
garciaj4@ccf.org

**Brain Tumors/Metastases**

Phase II Trial of Patupilone in Patients with Brain Metastases from Breast Cancer

Principal Investigator: David Peereboom, MD
Contact: Cathy Brewer, RN, 216.444.7937

A Phase II/III Randomized Study of CDX-110 with Radiation and Temozolomide in Patients with Newly Diagnosed Glioblastoma Multiforme

Principal Investigator: Michael Vogelbaum, MD, PhD
Contact: Cathy Brewer, RN, 216.444.7937

**Colorectal Cancer**

Nine-Month Trial Studying the Safety, Tolerability and Effectiveness of Black Raspberries on Rectal Polyps in Adults with Familial Adenomatous Polyposis (FAP)

Principal Investigator: Carol Burke, MD
Contact: Hennie Hasson, RN, 216.444.6526

**Hematologic Malignancies**

A Prospective, Multicenter Trial of Novo TTF-100A Compared to the Best Standard of Care in Progressive or Recurrent GBM

Principal Investigator: Robert Weil, MD
Contact: Carol Patton, RN, 216.445.1067

Phase II Randomized Evaluation of Selective, 5-Lipoxygenase Inhibition by Boswellia Serrata Herbal Medicine Approach Compared to Control as an Adjuvant Therapy in Newly Diagnosed and Recurrent High Grade Gliomas

Principal Investigator: Glen Stevens, DO, PhD
Contact: Cathy Brewer, RN, 216.444.7937

A Phase 2 Study of Imatinib Mesylate (Gleevec®) as Maintenance Therapy after Induction and Consolidation Chemotherapy in Patients with Newly Diagnosed C-kit Positive Acute Myeloid Leukemia Less than 60 Years of Age

Principal Investigator: Anjali Advani, MD, 216.445.9354
Contact: Study Coordinator Hami Teal, 216.636.5646
A Phase 1 Trial of the Combination of Everolimus (RAD001) and Bortezomib (VELCADE) for Relapsed or Refractory Indolent and Mantle Cell Non-Hodgkin’s Lymphoma
Principal Investigator: John Sweetenham, MD, 216.445.6707
Contact: Study Coordinator Alison Vellani, 216.445.8907

Lung Cancer
A Randomized Phase III Comparison of Standard-Dose (60 Gy) Versus High-Dose (74 Gy) Conformal Radiotherapy with Concurrent and Consolidation Carboplatin/Paclitaxel in Patients with Stage IIIA/IIIB Non-Small Cell Lung Cancer
Principal Investigator: Gregory Videtic, MD
Contact: Renee Yorkievitz, RN, BSN, 216.445.6545

Lymphoma
A Phase I/II Study of Pre-irradiation Chemotherapy with Methotrexate, Rituximab, Temozolomide and Post-irradiation Temozolomide for Primary Central Nervous System Lymphoma
Principal Investigator: John Suh, MD
Contact: Renee Yorkievitz, RN, BSN, 216.445.6545

Ocular Cancer
Choroidal Indeterminate Melanocytic Lesions: Prompt vs Deferred Treatment: A Multi Center Randomized Study
Principal Investigator: Arun D. Singh, MD
Contact: 216.445.9479, singha@ccf.org or IML@ccf.org

Prostate Cancer
A Randomized, Double-Blind, Placebo-Controlled, Phase II Study With and Without Enzastaurin in Combination with Docetaxel and Prednisone, Followed by Enzastaurin Maintenance as First-Line Treatment in Hormone Refractory Metastatic Prostate Cancer Patients
Principal Investigator: Robert Dreicer, MD
Contact: 216.445.4623

Randomized Phase II Study of two different doses of RAD-001 (Everolimus) as Neo-adjuvant Therapy in Patients with Localized Prostate Cancer
Principal Investigator: Jorge A. Garcia, MD
Contact: 216.444.7774
garciaj4@ccf.org

Phase I-II Study Evaluating the Safety and Clinical Efficacy of Temsirolimus and Bevacizumab in Patients with Chemotherapy Refractory Castration Resistant Prostate Cancer (CRPC)
Principal Investigator: Jorge A. Garcia, MD
Contact: 216.444.7774
garciaj4@ccf.org

A Prospective Phase II Trial of Transperineal Ultrasound-Guided Brachytherapy for Locally Recurrent Prostate Adenocarcinoma Following External Beam Radiotherapy
Principal Investigator: Jay Ciezki, MD
Contact: Renee Yorkievitz, RN, BSN, 216.445.6545
CANCER CONSULT 2008 SPECIAL EDITION

Taussig Cancer Institute and Leukemia & Lymphoma Society Partnership

To increase access and participation in clinical trials among adult blood cancer patients, the Leukemia & Lymphoma Society and Cleveland Clinic’s Taussig Cancer Institute have launched a groundbreaking partnership called “The Clinical Trial Center for Hematologic Malignancies.”

This innovative collaboration is a unique approach to making blood cancer clinical trials available to patients in their community so they can easily have access to the newest treatments for leukemia, lymphoma and myeloma.

“The challenge of getting patients to participate in clinical trials is one of the greatest obstacles to getting new drugs approved,” says Louis DeGennaro, PhD, Chief Scientific Officer of The Leukemia & Lymphoma Society. “In fact, less than 5 percent of adult cancer patients currently participate throughout the nation.”

Other major barriers to recruiting patients into clinical trials include patients’ reluctance to leave their own doctor and travel to major cities outside of their own communities to get treatments and participate in clinical trials. Patients also are often fearful of participating in trials because they view them as risky.

Cleveland Clinic is uniquely structured to work with the Society to overcome these hurdles. Taussig Cancer Institute has 45 oncologists at its main campus and another 20 on staff throughout its regional hospitals in Greater Cleveland, so patients can easily participate in the Center’s clinical trials while still remaining with their own doctors — going a long way toward alleviating fears about participating in trials.

“The beauty of this partnership is that it breaks down the other barriers often associated with clinical trial participation,” says John Sweetenham, MD, Director of Clinical Research at Taussig Cancer Institute. “The strides made under this partnership will accelerate the process of developing and delivering new, more advanced drugs for patients and will allow us to bring these needed treatments out to people in their own communities without them having to travel downtown.”

While most national clinical trials are conducted by cooperative groups — vast networks of physicians, researchers, medical centers and universities across the country — the Society-backed program at Cleveland Clinic will greatly streamline the process and expedite the advancement of new drugs, since the trials will all be conducted by a single clinical center with access to a large volume of patients to ease accruals to trials.

The partnership aims to undertake more than six clinical trials over the next three years, enrolling 100 to 150 patients, increasing the number of trials typically completed for these types of cancers in this timeframe. The Society, which has set as one of its strategic goals the acceleration of blood cancer therapies by enrolling more people in clinical trials, has access to new therapies and will help determine which drugs should be tested. Cleveland Clinic Taussig Cancer Institute will help to design the trials and administer them. The organizations will co-fund the effort.
You never know where you might meet an angel, a 4th Angel, that is. The Scott Hamilton CARES Initiative 4th Angel Mentoring Program has grown beyond northeast Ohio, spreading its wings into the upper Midwest in 2007 with plans to grow even more this year.

The original 4th Angel Mentoring Program, originated at Cleveland Clinic by Scott Hamilton, matches newly diagnosed cancer patients with a cancer survivor mentor who acts as a supporter, confidante and cheerleader through the ups and downs of cancer treatment. The program was expanded in 2007 with the 4th Angel Caregiver Mentoring Program, matching cancer caregivers with mentors who use their personal experience to help caregivers cope with their difficult role.

So that more patients can benefit, CARES is expanding the 4th Angel Mentoring Program across the United States. Based on the experiences of Lori Doonan, Midwest Director for 4th Angel, hospitals and patients will welcome the program.

In her first six months working in the Minneapolis area, Doonan launched 4th Angel Mentoring Programs at five hospitals in the Twin Cities area and one in Fargo, N.D. She also has linked 4th Angel with the Kidney Cancer Association nationally — look for the 4th Angel link on the organization’s webpage www.kidneycancer.org — and the Twin Cities branch of the American Cancer Society.

“I am passionate about the 4th Angel program,” Doonan says. “It makes such a difference to patients to be connected with someone who understands what they are going through.”

Hospitals in the upper Midwest are extremely receptive to the program, she says. Equally important, patients from these hospitals and organizations are eager to sign up and connect with a cancer survivor, someone “who has been there,” she adds. Physicians already have referred dozens of patients and new Angels to the program.

With this success in the first six months, Doonan has ambitious plans for 2008. “My goal is to take the 4th Angel Mentoring Program to hospitals in Nebraska, Iowa, Wisconsin — throughout the Midwest,” she says. “Wherever there are cancer patients, there are people who can benefit from the 4th Angel Mentoring Program. We can offer them a beacon of hope.”
Outcomes Data Available

Measuring and reporting outcomes reinforces our commitment to enhancing care and achieving excellence for our patients and referring physicians.

Taussig Cancer Institute has recently released the latest Outcomes book, which provides information on results, volumes and innovations related to the care we provide.

Our 2007 Outcomes book has collected quality and outcomes data from across our institute, including the following areas:

- Oncology
- Community Oncology
- Hematologic Oncology & Blood Disorders
- Benign Hematology Program
- Lymphoma Program
- Acute Leukemia Program
- Chronic Leukemia & Multiple Myeloma Program
- Solid Tumor Oncology
- Breast Program
- Gastrointestinal Program

- Genitourinary Program
- Upper Aerodigestive Tract Malignancies/ Head and Neck
- Palliative Medicine
- Radiation Oncology Overview
- Hematopoietic Diseases & Multiple Myeloma
- Brain Tumor & Radiosurgery Program
- Ocular Cancer
- Lung Cancer
- Prostate Cancer
- Head and Neck Cancer
- Breast Cancer
- Gynecological Cancer

To view Taussig Cancer Institute's 2007 Outcomes book as well as those for other Cleveland Clinic institutes, visit Cleveland Clinic's Quality and Patient Safety website at clevelandclinic.org/quality/outcomes.
Selected Leadership Roles in Professional Groups and Societies
2007-2008

American Association for the Advancement of Science
Fellows
Charis Eng, MD, PhD
Roy Silverstein, MD

American Academy of Hospice and Palliative Medicine
Founding Member
T. Declan Walsh, MD

American Board of Radiology
Section Head, CNS/Pediatric Section for Oral Board Exam in Radiation Oncology & Oral Board Examiner
John Suh, MD

American Cancer Society
Cuyahoga County Unit Board of Directors
Derek Raghavan, MD, PhD

American College of Physicians Fellows
E.C. Borden, MD
Ronald M. Bukowski, MD
Derek Raghavan, MD, PhD
Timothy P. Spiro, MD
T. Declan Walsh, MD

American College of Radiology Radiological Society of North America
ACR Appropriateness Criteria Expert Panels on Radiation Oncology
John Suh, MD

ASCO 2008 GU Cancer Symposium
Chairman, Steering Committee
Robert Dreicer, MD

ASCO Cancer Therapy Evaluation Program
External Review Board Member
Brian Rini, MD

ASCO Ethics Committee
Committee Member
Robert Dreicer, MD

American Society of Human Genetics
Board of Directors, Expert Speakers Bureau
Charis Eng, MD, PhD

American Society of Therapeutic Radiology and Oncology (ASTRO)
Reviewer
John Suh, MD

Autologous Bone Marrow Transplant Research
Elected Member, Executive Committee
Brian J. Bolwell, MD

Center for International Bone Marrow Transplant Research
Co-Chairman, Late Effects Committee
Brian J. Bolwell, MD

Clinical Sciences Committee, Personalized Medicine Coalition
Chair
Charis Eng, MD, PhD

European Association of Palliative Care
Founding Member
T. Declan Walsh, MD

Foundation for the Accreditation of Hematopoietic Cell Therapy
Official Inspector
Brian J. Bolwell, MD

Gynecologic Oncology Group
Phase I Committee Member, Ovarian Committee Member
Peter Rose, MD

Hope Lodge
Board of Directors
Derek Raghavan, MD, PhD

International Stereotactic Radiosurgery Society
Board Member, Director of Membership Committee
John Suh, MD

National Cancer Institute
Co-Chairman, Previously-Untreated Locally Advanced Disease Task Force, Head and Neck Cancer Steering Committee
David J. Adelstein, MD

National Comprehensive Cancer Network (NCCN) Guidelines
Special Consultant
Charis Eng, MD, PhD

Ohio Hematopoietic Stem Cell Transplant Consortium
Chairman, Board of Trustees
Chairman, Patient Review Committee
Brian J. Bolwell, MD

Royal Australian College of Physicians Fellow
Derek Raghavan, MD, PhD

Royal College of Physicians (Edinburgh) Fellows
John Sweetenham, MD
T. Delcan Walsh, MD

Southwestern Oncology Group
Vice Chair, Genitourinary Group
Derek Raghavan, MD, PhD
Taussig Cancer Institute’s chairmen (L to R) Derek Raghavan, MD, PhD, Chairman, Taussig Cancer Institute; Timothy P. Spiro, MD, Chairman, Regional Oncology; Robert Dreicer, MD, Chairman, Solid Tumor Oncology; Brian J. Bolwell, MD, Chairman, Hematologic Oncology and Blood Disorders; John Suh, MD, Chairman, Radiation Oncology.
Selected Leadership Roles in Conferences
2007-2008

American Association of Medical Audit Specialists
Invited Speaker
John Suh, MD

American Brachytherapy Society Meeting
Invited Speaker
John Suh, MD

American Head and Neck Society
Program Committee, 2007 AHNS Annual Meeting
7th International Conference on Head and Neck Cancer, 2008
David J. Adelstein, MD

American Society of Clinical Oncology (ASCO)
Co-Chair, ASCO Advisory Group on Health Disparities
Derek Raghavan, MD, PhD

ASCO Annual Meeting, Chicago
Scientific Session Chair
Timothy Gilligan, MD

ASCO Prostate Cancer Meeting, San Francisco, Calif.
Plenary Speaker
Derek Raghavan, MD, PhD

American Society of Human Genetics 57th Annual Meeting, San Diego, Calif.
Invited Speaker
Charis Eng, MD, PhD

American Association for Thoracic Surgery, 2007 General Thoracic Surgery Symposium
Invited Speaker
Tarek Mekhail, MD

American Urological Association Annual Scientific Meeting
Speaker
Derek Raghavan, MD, PhD

Anti-Angiogenic Agents 9th International Symposium
Invited Speaker
Brian Rini, MD

ASH Review, University of Nebraska
Invited Speaker
J.W. Sweetenham, MD

ASTRO Review
Course Director
John Suh, MD

Belgian Oncology Society: Post-ASCO Course, Brussels, Belgium
Plenary Speaker
Derek Raghavan, MD, PhD

City of Hope Comprehensive Cancer Center, Annual Cancer Meeting, San Diego, Calif.
Principal Speaker
Derek Raghavan, MD, PhD

Cleveland Clinic Stereotactic Radiosurgery Conference, Lake Buena Vista, Fla.
Course Co-Director
Samuel Chao, MD

Cleveland Clinic Taussig Cancer Institute National Leadership Board
Presenter
Derek Raghavan, MD, PhD

Contemporary Issues in Pituitary Disease
Invited Speaker
John Suh, MD

Duke University Cancer Center Hematologic Malignancy Grand Rounds & Taussig Cancer Institute Grand Rounds
Invited Speaker, Novel Treatment Strategies for Acute Lymphocytic Leukemia
Anjali S. Advani, MD

ESGO, Berlin, Germany
Invited Presenter
Peter Rose, MD

European Cancer Conference (14th annual), Barcelona, Spain
Invited Speaker
Brian Rini, MD

European Perspectives in Urologic Oncology – A Case-Based Congress to Enhance Patient Management, Barcelona, Spain
Co-Chair, Presenter & Plenary Lecturer
Derek Raghavan, MD, PhD

First International Symposium on Stereotactic Body Radiation Therapy and Stereotactic Radiosurgery
Invited Speaker
John Suh, MD

GOG Conference 2007
Invited Speaker
Peter Rose, MD

International Chicago Lymphoma Symposium
Invited Speaker
John Suh, MD

International Congress on Kidney and Bladder Cancer
Invited Speaker
John Suh, MD

International Kidney Cancer Symposium (6th annual)
Invited Speaker
Brian Rini, MD

International Renal Tumors Biology Meeting, Charmontix, France
Invited Speaker
M. A. Aldred, MD

International Society for Biologic Therapy
Moderator, Invited Lecturer
Brian Rini, MD

Invited Speaker & Course Co-Director
Peter Rose, MD
Course Co-Director
John Suh, MD

Japan Urological Association Annual Meeting, Yokohama, Japan
Invited Lecturer
Brian Rini, MD

Korean Novalis Meeting in Seoul, Korea
Keynote Speaker
Samuel Chao, MD

Kukuna-o-ka-la Radiation Oncology Conference
Invited Speaker
John Suh, MD

Medical College of Wisconsin Annual Cancer Symposium
Plenary Lecture
Derek Raghavan, MD, PhD
Memorial Sloan Kettering Cancer Center
Invited Speaker
John Suh, MD

North American Society Base Society Meeting
Invited Speaker
John Suh, MD

Prostate Health Education Network Prostate Cancer Disparity Summit
Invited Speaker
Timothy Gilligan, MD

Samsung International Brain Tumor Symposium, Seoul, South Korea
Invited Speaker
John Suh, MD

The Endocrine Society, Toronto, Canada, 89th Annual Meeting
Invited Speaker
Charis Eng, MD, PhD

The Oncology Congress
Invited Speaker
Timothy Gilligan, MD

U.C. Davis Comprehensive Cancer Center, National Genitourinary Cancer Meeting
Invited Speaker
Derek Raghavan, MD, PhD

Universal Cancer Care Coverage Meeting, Alexander, Va.
Co-Chair
Timothy Gilligan, MD

World Basic Urological Research Congress, Dublin, Ireland
Moderator, Lecturer
Brian Rini, MD

World Spine Congress IV, Istanbul, Turkey
Invited Lecturer
Samuel Chao, MD

ASCO MCMC Conference
The American Society of Clinical Oncology Multidisciplinary Course in Management of Cancer: Focus on Genitourinary & Thoracic Malignancies was held in Cape Town, South Africa on April 26 and 27, 2008.

Approximately 180 people attended the meeting. We had the great privilege of having Archbishop Desmond Tutu welcome the attendees. He talked with candor, dignity and courage of his own illness. He also made very welcome comments about the spiritual dimension of health care and called on us to make patients whole.

Jointly sponsored by the American Society of Clinical Oncology and the South African Society of Medical Oncology, Taussig Chairman Derek Raghavan, MD, PhD, served as the course convener and lecturer and Andrew Stephenson, MD, (Glickman Institute) was the designated lecturer in urological surgical oncology.

From Left to Right: Derek Raghavan, MD, PhD, (Chairman, Taussig Cancer Institute; course director), Daniel Vorobiof, MD (Oncologist, Johannesburg, South Africa), Archbishop Desmond Tutu, Brian Burmeister (Chair, Radiation Oncology, Princess Alexandra Hospital, Brisbane, Australia), Prof. Raymond Abratt (University of Cape Town, Chair of Radiation Oncology), Andrew Stephenson, MD (Attending Urologist, Cleveland Clinic Glickman Urological & Kidney Institute), Joan Schiller, MD (Chair of Medical Oncology & Deputy Director, UT Southwestern Cancer Center, Dallas, Texas).
Selected Leadership Roles in Publishing
2007-2008

Abstracts in Hematology and Oncology
Editorial Board Member
Derek Raghavan, MD, PhD

ACP-ASIM PIER Bladder Cancer Module
Reviewer
Robert Dreicer, MD

Acta Haematologica
Reviewer
Brian J. Bolwell, MD

Advances in Oncology
Editorial Board Member
Derek Raghavan, MD, PhD

American Head and Neck Society
Publications Committee, Quality Committee
David J. Adelstein, MD

American Journal of Clinical Oncology
Editorial Board Member & Referee
Derek Raghavan, MD, PhD
Editorial Board Member
Matt Kalaycio, MD
Reviewer
John Suh, MD

American Journal of Human Genetics
Associate Editor
Charis Eng, MD, PhD

American Journal of Medical Genetics
Ad Hoc Reviewer
Charis Eng, MD, PhD

American Journal of Obstetrics and Gynecology
Ad Hoc Reviewer
Peter Rose, MD

American Journal of Pathology
Ad Hoc Reviewer
Charis Eng, MD, PhD

American Journal of Surgical Pathology
Ad Hoc Reviewer
Charis Eng, MD, PhD

American Journal of Urology
Reviewer
Ronald M. Bukowski, MD

American Review of Respiratory Disease
Referee
Derek Raghavan, MD, PhD

American Society of Clinical Oncology
Specialty Editor
Timothy Gilligan, MD

American Society of Hematology
Reviewer
Anjali S. Advani, MD

American Society of Therapeutic Radiology and Oncology
Reviewer
John Suh, MD

Annals of Internal Medicine
Reviewer
Brian J. Bolwell, MD
Referee
Derek Raghavan, MD, PhD

Annals of Oncology
Reviewer
Robert Dreicer, MD
Referee
Derek Raghavan, MD, PhD

Archives of Medical Research
Ad Hoc Reviewer
Peter Rose, MD

ASCO Daily News
Associate Editor
John Sweetenham, MD

ASCO People Living With Cancer Website
Editorial Board Member & Associate Editor,
Matt Kalaycio, MD

Australia & New Zealand Journal of Medicine
Referee
Derek Raghavan, MD, PhD

Australia & New Zealand Journal of Surgery
Referee
Derek Raghavan, MD, PhD

Biology of Blood & Marrow Transplantation
Reviewer
Brian J. Bolwell, MD

Bladder Cancer
Editorial Board Members & Section Editors of
UpToDate Web System
Derek Raghavan, MD, PhD
Matt Kalaycio, MD

Blood
Reviewer
Brian J. Bolwell, MD
Ad Hoc Reviewers
Charis Eng, MD, PhD
Matt Kalaycio, MD

Bone Marrow Transplantation
Editor & Reviewer
Brian J. Bolwell, MD
Ad Hoc Reviewer
Matt Kalaycio, MD

Breast Cancer Research
Ad Hoc Reviewer
Charis Eng, MD, PhD

British Journal of Cancer
Referee
Derek Raghavan, MD, PhD
Ad Hoc Reviewer
Charis Eng, MD, PhD

British Journal of Urology International
Editorial Board Members
Derek Raghavan, MD, PhD
Matt Kalaycio, MD
Reviewer
Robert Dreicer, MD

British Journal of Urology, Cancer
Chemotherapy and Pharmacology
Referee
Derek Raghavan, MD, PhD

CAA Cancer Journal for Clinicians
Reviewer
Robert Dreicer, MD
Cancer
Editorial Advisory Board Member & Ad Hoc Reviewer
Peter Rose, MD
Derek Raghavan, MD, PhD
G.T. Budd, MD
Robert Dreicer, MD
Tarek Mekhail, MD
John Suh, MD
Timothy Gilligan, MD
Ad Hoc Reviewers
Charis Eng, MD, PhD
Matt Kalaycio, MD
Brian Rini, MD

Cancer Cell
Ad Hoc Reviewer
Charis Eng, MD, PhD

Cancer Detection and Prevention
Ad Hoc Reviewer
Peter Rose, MD

Cancer Epidemiology, Biomarkers and Prevention
Reviewer
G.T. Budd, MD

Cancer Investigation
Reviewer
Robert Dreicer, MD
Ad Hoc Reviewer
Peter Rose, MD

Cancer Letters
Reviewer
G.T. Budd, MD

Cancer.net
Associate Editor
John Sweetenham, MD

Cancer Research
Referee
Derek Raghavan, MD, PhD

Cleveland Clinic ASTRO 2007 Review
Abstract Reviewer
S. Chao, MD

Cleveland Clinic Journal of Medicine
Reviewer
G.T. Budd, MD
Tarek Mekhail, MD

Clinical Cancer Research
Associated Editor & Referee
Derek Raghavan, MD, PhD
Associate Editor
E.C. Borden, MD
Reviewers
Ronald M. Bukowski, MD
Robert Dreicer, MD
Ad Hoc Reviewers
Charis Eng, MD, PhD
Brian Rini, MD

Clinical Endocrinology
Ad Hoc Reviewer
Charis Eng, MD, PhD

Clinical Genetics
Ad Hoc Reviewer
Charis Eng, MD, PhD

Clinical Genitourinary Cancer
Editorial Board Members
Derek Raghavan, MD, PhD
Robert Dreicer, MD
Editorial Board Member & Ad Hoc Reviewer
Brian Rini, MD

Clinical Prostate Cancer
Reviewer
Robert Dreicer, MD

Controversies in Bone Marrow Transplantation
Editor
Brian J. Bolwell, MD

Critical Reviews in Oncology Hematology
Reviewer
Robert Dreicer, MD

European Journal of Cancer
Editorial Board Member
Matt Kalaycio, MD
Editorial Board Member & Referee
Derek Raghavan, MD, PhD

European Journal of Human Genetics
Ad Hoc Reviewer
Charis Eng, MD, PhD

European Urology
Reviewer
Robert Dreicer, MD

Expert Review of Anti-cancer Therapy
Ad Hoc Reviewer
Brian Rini, MD

FEBS Letters
Ad Hoc Reviewer
Charis Eng, MD, PhD

Future Oncology
Reviewer
J.W. Sweetenham, MD
Ad Hoc Reviewer
Brian Rini, MD

Gastroenterology
Ad Hoc Reviewer
Charis Eng, MD, PhD

Genomics
Ad Hoc Reviewer
Charis Eng, MD, PhD

Gynecologic Oncology
Ad Hoc Reviewer
Peter Rose, MD

Hematological Oncology
Reviewer
Brian J. Bolwell, MD

Hematopoietic Therapy Index & Reviews
Reviewer
Brian J. Bolwell, MD

Human Genetics
Ad Hoc Reviewer
Charis Eng, MD, PhD

Human Mutation
Ad Hoc Reviewer
Charis Eng, MD, PhD

Immunotherapy
Associate Editor
Ronald M. Bukowski, MD
Ad Hoc Reviewer
Brian Rini, MD
Selected Leadership Roles in Publishing
2007-2008 (continued)

In Vivo
Editorial Board
Ram Ganapathi, PhD

Indian Journal of Urology
Reviewer
Robert Dreicer, MD

International Journal of Biologicals
Associate Editor
E.C. Borden, MD

International Journal of Cancer
Reviewer & Member of Editorial Academy
G.T. Budd, MD
Ad Hoc Reviewer
Charis Eng, MD, PhD

International Journal of Radiation Oncology,
Biology and Physics
Referee
Derek Raghavan, MD, PhD
Reviewer
John Suh, MD

Investigational New Drugs
Associate Editor
Ronald M. Bukowski, MD
Reviewer
G.T. Budd, MD

Journal of the American Medical Association
Referee
Derek Raghavan, MD, PhD
Ad Hoc Reviewer
Charis Eng, MD, PhD
Reviewer
Peter Rose, MD

Journal of Balkan Union of Oncology
International Editorial Board
Derek Raghavan, MD, PhD

Journal of Biological Chemistry
Ad Hoc Reviewer
Charis Eng, MD, PhD

Journal of Bone and Joint Surgery
Reviewer
G.T. Budd, MD

Journal of Bronchology
Reviewer
Tarek Mekhail, MD

Journal of Cancer Research and Clinical Oncology
Reviewer
G.T. Budd, MD
Robert Dreicer, MD

Journal of Clinical Investigation
Consulting Editor
Charis Eng, MD, PhD

Journal of Clinical Oncology
Editorial Board Member & Referee
Derek Raghavan, MD, PhD
Editorial Board Member & Ad Hoc Reviewer
Peter Rose, MD
Editorial Board Members
Robert Dreicer, MD
John Sweeneyham, MD
Referees
Brian J. Bolwell, MD
G.T. Budd, MD
Charis Eng, MD, PhD
John Suh, MD
Ad Hoc Reviewers
Matt Kalaycio, MD
Brian Rini, MD

Journal of Cytokine Research
Ad Hoc Reviewer
Brian Rini, MD

Journal of Genitourinary Malignancies
Editor-in-Chief
Ronald M. Bukowski, MD

Journal of the National Cancer Institute
Reviewer
Robert Dreicer, MD
Ad Hoc Reviewer
Charis Eng, MD, PhD

Journal of Oncology
Reviewer
John Suh, MD

Journal of Reproductive Medicine
Ad Hoc Reviewer
Peter Rose, MD

Journal of Supportive Oncology
Editorial Advisory Board Member
Robert Dreicer, MD

Journal of Surgical Oncology
Ad Hoc Reviewers
Brian Rini, MD
Peter Rose, MD

Journal of Urology
Consulting Editor & Referee
Derek Raghavan, MD, PhD
Ad Hoc Reviewer
Brian Rini, MD
Reviewer
Robert Dreicer, MD

Journal Watch Oncology and Hematology
Associate Editor, NEJM
Robert Dreicer, MD

Kidney Cancer Journal
Reviewer
Ronald M. Bukowski, MD
Editorial Board Member
Brian Rini, MD

Lancet
Ad Hoc Reviewers
Brian Rini, MD
Peter Rose, MD

Lancet Oncology
Reviewer
Robert Dreicer, MD
Referee
Derek Raghavan, MD, PhD
Ad Hoc Reviewers
Charis Eng, MD, PhD
Matt Kalaycio, MD
Brian Rini, MD

Leukemia
Reviewer
Brian J. Bolwell, MD
Ad Hoc Reviewer
Matt Kalaycio, MD

Leukemia Research
Ad Hoc Reviewer
Matt Kalaycio, MD

Medical Journal Editorial Boards
URO Associate Editor
Ronald M. Bukowski, MD

Medical Journal of Australia
Referee
Derek Raghavan, MD, PhD
Thirty-three Named to “America’s Top Docs”

Thirty-three physicians who treat cancer at Cleveland Clinic are among the best in the nation.

That according to the 7th edition of “America’s Top Doctors,” by Castle Connolly. More than 230,000 doctors are surveyed to compile the list of physicians recognized by their peers for excellence in providing care for specific diseases and problems. Less than 1 percent of doctors nationwide are chosen for this honor. Cleveland Clinic doctors included are:

**Child Neurology**
- Bruce Cohen, MD

**Colorectal Surgery**
- Ian Lavery, MD

**Dermatology**
- Philip B告in, MD

**OB/GYN**
- Jerome Belinson, MD
- Peter Rose, MD

**Hematology**
- Jaroslaw Maciejewski, MD, PhD

**Neurological Surgery**
- Gene Barnett, MD

**Nuclear Medicine**
- Donald Neumann, MD

**Oncology**
- Brian Bolwell, MD
- Ernest Borden, MD
- G. Thomas Budd, MD
- Ronald Bukowski, MD
- Mellar Davis, MD
- Robert Dreicer, MD
- Charis Eng, MD, PhD
- Matt Kalaycio, MD
- T. Declan Walsh, MD

**Pathology**
- John Goldblum, MD
- Brian Rubin, MD

**Plastic Surgery**
- Randall Yetman, MD

**Radiation Oncology**
- Roger Macklis, MD
- John Suh, MD

**Surgery**
- Joseph Crowe, MD
- John Fung, MD, PhD
- Allan Siperstein, MD
- R. Matthew Walsh, MD

**Urology**
- Steven Campbell, MD, PhD
- Inderbir Gill, MD
- Eric Klein, MD
- Andrew Novick, MD
- Anthony Thomas, MD
- Craig Zippe, MD

Taussig Cancer Institute is proud to announce that 27 of its physicians were named to Cleveland Magazine’s annual list of Northeast Ohio’s “Top Docs.” Chosen by peers and selected by Best Doctors Inc., Taussig’s “Top Docs” represent the best in medical oncology & hematology and radiation oncology. Cleveland Clinic doctors included are:

**Medical Oncology & Hematology**
- David Adelstein, MD
- Brian J. Bowell, MD
- Ernest Borden, MD
- G. Thomas Budd, MD
- Edward Copelan, MD
- Mellar Davis, MD
- Robert Dreicer, MD
- Charis Eng, MD, PhD
- Matt Kalaycio, MD
- Alan Lichtin, MD
- Jaroslaw Maciejewski, MD, PhD
- Vinit Makkar, MD
- Tarek Mekhail, MD
- David Peereboom, MD
- Robert Pelley, MD
- Brad Pohlman, MD
- Derek Raghavan, MD, PhD
- Brian Rini, MD
- Gary Schnur, MD
- Mikkael Sekeres, MD, MS
- Roy Silverstein, MD
- John Sweetenham, MD
- T. Declan Walsh, MD

**Radiation Oncology**
- Jay Ciezki, MD
- Roger Macklis, MD
- Jerrold Saxton, MD
- Gregory Videtic, MD
TAUSSIG CANCER INSTITUTE CHAIRMAN

Derek Raghavan, MD, PhD, FACP, FRACP
Chairman, Taussig Cancer Institute
M. Frank & Margaret Domiter Rudy Distinguished Chair,
Email: raghavd@ccf.org
Office: 216.445.6888
Appointments: 866.223.8100
Fax: 216.444.8885
Advanced Training: Royal Marsden Hospital, Sutton, Surrey, England; Royal Prince Alfred Hospital, Sydney, Australia; University of Minnesota Medical School, Minneapolis, Minn.
Medical School: University of Sydney-Faculty of Medicine, Sydney, Australia
Specialty Interests: prostate cancer and prostatic disease, bladder cancer, testis cancer, geriatric oncology, and lung cancer
Location: Main Campus

TAUSSIG CANCER INSTITUTE LEADERSHIP

Brian J. Bolwell, MD
Chairman, Department of Hematologic Oncology and Blood Disorders,
Vice Chairman, Office of the Chief of Staff,
Email: bolwebb@ccf.org
Office: 216.444.6922
Appointments: 866.223.8100
Fax: 216.444.9774
Advanced Training: Hospital of University of Pennsylvania, Philadelphia; University Hospitals of Cleveland, Cleveland, Ohio
Medical School: Case Western Reserve University School of Medicine, Cleveland, Ohio
Specialty Interests: bone marrow transplantation, leukemia, lymphoma
Location: Main Campus

Robert Dreicer, MD
Chairman, Department of Solid Tumor Oncology
Email: dreicer@ccf.org
Office: 216.445.4623
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: University of Wisconsin Hospital and Clinic, Madison, Wisc.; Indiana University Medical Center, Indianapolis, Ind.
Medical School: University of Texas, Houston
Specialty Interests: urologic oncology, experimental therapeutics
Location: Main Campus

Timothy P. Spiro, MD, FACP
Chairman, Department of Regional Oncology
Email: spirot@ccf.org
Office: 216.476.7606
Appointments: 216.476.7606
Fax: 216.476.6967
Advanced Training: University Hospitals of Cleveland, Cleveland, Ohio; University of Connecticut Health Center, Farmington, Conn.; Auckland University Hospital, Auckland, New Zealand
Medical School: University of Western Australia School of Medicine, Nedlands, Western Australia
Specialty Interests: hematology/oncology
Location: Fairview, Lorain, Main Campus

John Suh, MD
Chairman, Department of Radiation Oncology
Email: suhj@ccf.org
Office: 216.444.5574
Appointments: 216.444.5571
Fax: 216.445.1068
Advanced Training: Cleveland Clinic, Cleveland, Ohio
Medical School: University of Miami Miller School of Medicine, Miami
Specialty Interests: adult and pediatric brain tumors, gamma knife radiosurgery, intensity-modulated radiation therapy, pediatric radiotherapy, radiation sensitizers
Location: Main Campus
HEMATOLOGIC ONCOLOGY AND BLOOD DISORDERS

Benign Hematology, Leukemias, Lymphomas, Multiple Myelomas, Myelodysplasia/Myeloproliferative Disorders, Pheresis, Platelet/Clotting Disorders

Brian J. Bolwell, MD
Chairman, Department of Hematologic Oncology and Blood Disorders,
Vice Chair, Office of the Chief of Staff
Email: bolwelb@ccf.org
Office: 216.444.6922
Appointments: 866.223.8100
Fax: 216.444.9774
Advanced Training: Hospital of University of Pennsylvania, Philadelphia; University Hospitals of Cleveland, Cleveland, Ohio
Medical School: Case Western Reserve University School of Medicine, Cleveland, Ohio
Specialty Interests: bone marrow transplantation, leukemia, lymphoma
Location: Main Campus

Anjali Advani, MD
Email: advania@ccf.org
Office: 216.445.9354
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Duke University Medical Center, Durham, N.C.
Medical School: Duke University School of Medicine, Durham, N.C.
Specialty Interests: leukemia, myelodysplasia, targeted therapy, clinical trials
Location: Main Campus

Steven Andresen, DO
Email: andress@ccf.org
Office: 216.444.3737
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Cleveland Clinic, Cleveland, Ohio
Medical School: University of Osteopathic Medicine and Health Sciences, Des Moines, Iowa
Specialty Interests: hematology, hematologic malignancies, bone marrow transplantation, breast cancer
Location: Main Campus

Edward Copelan, MD
Email: copelae@ccf.org
Office: 216.445.5647
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: The Ohio State University Hospitals, Columbus, Ohio; University of California Los Angeles Medical Center, Westwood, Calif.
Medical School: Tufts University School of Medicine, Boston
Specialty Interests: hematopoietic stem cell transplantation, acute leukemias, chronic myeloid leukemia, multiple myeloma, lymphoma
Location: Main Campus

Mellar Davis, MD
Email: davism6@ccf.org
Office: 216.444.4622
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Mayo Clinic, Rochester, Minn.; Riverside Methodist Hospital, Columbus, Ohio
Medical School: The Ohio State University College of Medicine and Public Health, Columbus, Ohio
Specialty Interests: pain management, cancer pain, palliative medicine, hospice, symptom control, supportive cancer care, cancer related fatigue, cancer anorexia and weight loss, lung cancer, paraproteinemias and amyloidosis
Location: Main Campus

Robert Dean, MD
Email: deanr@ccf.org
Office: 216.445.5365
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: National Cancer Institute, Bethesda, Md.; Boston Medical Center, Boston
Medical School: University of Pennsylvania School of Medicine, Philadelphia
Specialty Interests: bone marrow and stem cell transplantation, lymphoma, leukemia
Location: Main Campus

Leonard Horwitz, MD
Email: horwlt@ccf.org
Office: 216.445.2030
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: M.D. Anderson Hospital & Tumor Institute, Houston
Medical School: Albert Einstein College of Medicine, Bronx, N.Y.
Specialty Interests: benign hematologic disorders, coagulation disorders, MGUS and multiple myeloma
Location: Main Campus

Matt Kalaycio, MD
Email: kalaycm@ccf.org
Office: 216.444.3705
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Cleveland Clinic, Cleveland, Ohio; Mercy Hospital of Pittsburgh, Pittsburgh
Medical School: West Virginia University School of Medicine, Morgantown, W.V.
Specialty Interests: leukemia, lymphoma, bone marrow transplant
Location: Main Campus

Anna Koo, MD
Email: kaoke@ccf.org
Office: 216.444.6333
Appointments: 866.223.8100
Fax: 216.444.2633
Advanced Training: Cleveland Clinic, Cleveland, Ohio
Medical School: University of Medicine & Dentistry of New Jersey, Newark, N.J.
Specialty Interests: therapeutic apheresis, general rheumatology
Location: Main Campus

Alan Lichtin, MD
Email: lichtia@ccf.org
Office: 216.444.6823
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Hospital of University of Pennsylvania, Philadelphia; University Hospitals of Cleveland, Cleveland, Ohio
Medical School: University of Cincinnati College of Medicine, Cincinnati, Ohio
Specialty Interests: adult hematology, coagulation and hemostasis disorders, hematologic malignancies, bone marrow transplantation
Location: Main Campus
RADIATION ONCOLOGY

Breast Cancer, Colorectal Cancer, Genitourinary Cancers, Gynecologic Cancers, Head and Neck Cancers, Lung Cancer, Lymphomas, Pediatric Cancers, Prostate Cancer, Sarcomas, Thoracic/Upper GI Cancers

John Suh, MD
Chairman, Department of Radiation Oncology
Email: suhj@ccf.org
Office: 216.445.9275
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: University of Michigan Health System, Ann Arbor, Mich.; Northwestern University, Evanston Hospital, Evanston, Ill.
Medical School: University of Michigan Medical School, Ann Arbor, Mich.
Specialty Interests: coagulation disorders (bleeding and thrombosis), including hemophilia, Von Willebrand disease, clotting factor deficiencies or inhibitors, thrombophilia (excess clotting), lupus anticoagulant or antiphospholipid syndrome, thrombocytopenia (ITP, TTP), hemolytic anemia
Location: Main Campus

Mikkael Sekeres, MD, MS
Email: sekorern@ccf.org
Office: 216.445.9353
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Dana-Farber Cancer Institute, Boston; Massachusetts General Hospital, Boston
Medical School: University of Pennsylvania School of Medicine, Philadelphia
Specialty Interests: leukemia, myelodysplastic syndromes (MDS), bone marrow failure syndromes, clinical trials
Location: Main Campus

John Sweetenham, MD
Email: sweeten@ccf.org
Office: 216.445.6707
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: University of Southampton, Southampton University Hospitals, Southampton, England; Saint Bartholomew’s Hospital, London; Royal Berkshire Hospital, Reading, England
Medical School: Saint Bartholomew and Royal London School of Medicine, London
Specialty Interests: non-Hodgkin’s lymphoma, Hodgkin’s lymphoma, autologous stem cell transplantation, hematologic malignancies
Location: Main Campus

Samuel Chao, MD
Email: chao@ccf.org
Office: 216.445.3876
Advanced Training: Cleveland Clinic, Cleveland, Ohio
Medical School: Case Western Reserve University School of Medicine, Cleveland, Ohio
Specialty Interests: CNS tumors, pediatric tumors, Gamma Knife radiosurgery, image-guided radiation therapy
Location: Main Campus

Ronald Sobeck, MD
Email: sobeckr@ccf.org
Office: 216.444.4626
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: University of Chicago Hospitals, Chicago; University Hospitals of Cleveland, Cleveland, Ohio
Medical School: Case Western Reserve University School of Medicine, Cleveland, Ohio
Specialty Interests: leukemia, hematopoietic stem cell transplantation, other hematologic malignancies, drug development/clinical trials for these diseases
Location: Main Campus

Brad Pohlman, MD
Email: pohlmbab@ccf.org
Office: 216.445.6070
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: University of Minnesota Hospital and Clinic, Minneapolis, Minn.
Medical School: Indiana University School of Medicine, Indianapolis, Ind.
Specialty Interests: Hodgkin’s lymphoma, non-Hodgkin’s lymphoma, bone marrow transplantation
Location: Main Campus

Yogen Saunthararajah, MD
Email: saunthy@ccf.org
Office: 216.444.8170
Appointments: 866.223.8100
Fax: 216.636.2498
Advanced Training: National Institutes of Health, Bethesda, Md.; Duke-NIH MPH Program; University of Hawaii, Hawaii
Medical School: The University of Wales College of Medicine, Wales, United Kingdom
Specialty Interests: myelodysplastic syndrome, acute myeloid leukemia, sickle cell, thalassemia
Location: Main Campus

Mikkael Sekeres, MD, MS
Email: sekorern@ccf.org
Office: 216.445.9353
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Dana-Farber Cancer Institute, Boston; Massachusetts General Hospital, Boston
Medical School: University of Pennsylvania School of Medicine, Philadelphia
Specialty Interests: leukemia, myelodysplastic syndromes (MDS), bone marrow failure syndromes, clinical trials
Location: Main Campus

John Sweetenham, MD
Email: sweeten@ccf.org
Office: 216.445.6707
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: University of Southampton, Southampton University Hospitals, Southampton, England; Saint Bartholomew’s Hospital, London; Royal Berkshire Hospital, Reading, England
Medical School: Saint Bartholomew and Royal London School of Medicine, London
Specialty Interests: non-Hodgkin’s lymphoma, Hodgkin’s lymphoma, autologous stem cell transplantation, hematologic malignancies
Location: Main Campus

John Suh, MD
Chairman, Department of Radiation Oncology
Email: suhj@ccf.org
Office: 216.445.9275
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: University of Michigan Health System, Ann Arbor, Mich.; Northwestern University, Evanston Hospital, Evanston, Ill.
Medical School: University of Michigan Medical School, Ann Arbor, Mich.
Specialty Interests: coagulation disorders (bleeding and thrombosis), including hemophilia, Von Willebrand disease, clotting factor deficiencies or inhibitors, thrombophilia (excess clotting), lupus anticoagulant or antiphospholipid syndrome, thrombocytopenia (ITP, TTP), hemolytic anemia
Location: Main Campus

Bernard Silver, MD
Email: silverb@ccf.org
Office: 216.445.9275
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: University of Michigan Health System, Ann Arbor, Mich.; Northwestern University, Evanston Hospital, Evanston, Ill.
Medical School: University of Michigan Medical School, Ann Arbor, Mich.
Specialty Interests: coagulation disorders (bleeding and thrombosis), including hemophilia, Von Willebrand disease, clotting factor deficiencies or inhibitors, thrombophilia (excess clotting), lupus anticoagulant or antiphospholipid syndrome, thrombocytopenia (ITP, TTP), hemolytic anemia
Location: Main Campus

John Suh, MD
Chairman, Department of Radiation Oncology
Email: suhj@ccf.org
Office: 216.445.9275
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: University of Michigan Health System, Ann Arbor, Mich.; Northwestern University, Evanston Hospital, Evanston, Ill.
Medical School: University of Michigan Medical School, Ann Arbor, Mich.
Specialty Interests: coagulation disorders (bleeding and thrombosis), including hemophilia, Von Willebrand disease, clotting factor deficiencies or inhibitors, thrombophilia (excess clotting), lupus anticoagulant or antiphospholipid syndrome, thrombocytopenia (ITP, TTP), hemolytic anemia
Location: Main Campus

John Sweetenham, MD
Email: sweeten@ccf.org
Office: 216.445.6707
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: University of Southampton, Southampton University Hospitals, Southampton, England; Saint Bartholomew’s Hospital, London; Royal Berkshire Hospital, Reading, England
Medical School: Saint Bartholomew and Royal London School of Medicine, London
Specialty Interests: non-Hodgkin’s lymphoma, Hodgkin’s lymphoma, autologous stem cell transplantation, hematologic malignancies
Location: Main Campus

Yogen Saunthararajah, MD
Email: saunthy@ccf.org
Office: 216.444.8170
Appointments: 866.223.8100
Fax: 216.636.2498
Advanced Training: National Institutes of Health, Bethesda, Md.; Duke-NIH MPH Program; University of Hawaii, Hawaii
Medical School: The University of Wales College of Medicine, Wales, United Kingdom
Specialty Interests: myelodysplastic syndrome, acute myeloid leukemia, sickle cell, thalassemia
Location: Main Campus
Jay Ciezki, MD
Email: ciezkij@ccf.org
Office: 216.445.9465
Advanced Training: Cleveland Clinic, Cleveland, Ohio
Medical School: Medical College of Wisconsin, Milwaukee, Wisc.
Specialty Interests: brachytherapy, prostate cancer and genitourinary oncology
Location: Main Campus

Jerold Saxton, MD
Email: saxtonj@ccf.org
Office: 216.444.5485
Appointments: 216.444.5571
Fax: 216.445.1068
Advanced Training: Baylor College of Medicine, Houston; University of Texas M.D. Anderson Cancer Center, Houston
Medical School: Meharry Medical College School of Medicine, Nashville, Tenn.
Specialty Interests: head and neck, colorectal, gynecologic, and genitourinary cancers
Location: Main Campus

Gregory Videtic, MD
Email: vde@ccf.org
Office: 216.444.9797
Appointments: 216.444.5571
Fax: 216.445.1068
Advanced Training: University of Western Ontario Faculty of Medicine and Dentistry, London, Ontario, Canada; Wayne State University-Detroit Medical Center, Detroit; Dalhousie University Faculty of Medicine, Halifax, Canada
Medical School: McGill University Faculty of Medicine, Montreal, Quebec
Specialty Interests: lung cancer, esophageal cancer, mesothelioma, mediastinal tumors, lung stereotactic body radiotherapy, gamma knife brain radiosurgery, radiation protectants, radiation sensitizers
Foreign Language: French and German
Location: Main Campus

Robert Dreicer, MD
Chairman, Department of Solid Tumor Oncology
Email: dreicer@ccf.org
Office: 216.445.4623
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: University of Wisconsin Hospital and Clinic, Madison, Wisc.; Indiana University Medical Center, Indianapolis, Ind.
Medical School: University of Texas M.D. Anderson Cancer Center, Houston
Specialty Interests: urologic oncology, experimental therapeutics
Location: Main Campus

David Adelstein, MD
Email: adelsted@ccf.org
Office: 216.444.9310
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Case Western Reserve University Affiliated Hospitals, Cleveland, Ohio
Medical School: University of New York University School of Medicine, New York, N.Y.
Specialty Interests: solid tumor oncology, head and neck cancer, gastrointestinal tumors
Location: Main Campus

Steven Andersen, DO
Email: andress@ccf.org
Office: 216.444.3737
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Cleveland Clinic, Cleveland, Ohio
Medical School: University of Osteopathic Medicine and Health Sciences, Des Moines, Iowa
Specialty Interests: hematology, hematologic malignancies, bone marrow transplantation, breast cancer
Location: Main Campus
Ernest Borden, MD
Email: bordene@ccf.org
Office: 216.444.8183
Appointments: 866.223.8100
Fax: 216.636.2498
Advanced Training: Johns Hopkins Hospital, Baltimore, Md.; Duke University Medical Center, Durham, N.C.; Hospital of University of Pennsylvania, Philadelphia
Medical School: Duke University School of Medicine, Durham, N.C.
Specialty Interests: melanoma, new cancer therapies including interferons, vaccines and antibodies
Location: Main Campus

G. Thomas Budd, MD
Email: buddg@ccf.org
Office: 216.444.6480
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Cleveland Clinic, Cleveland, Ohio
Medical School: University of Kansas School of Medicine, Kansas City, Kansas
Specialty Interests: solid tumors, breast cancer, sarcomas, biologic response modifiers, experimental therapeutics, cancer chemoprevention
Location: Main Campus

Ronald Bukowski, MD
Email: bukworsr@ccf.org
Office: 216.444.6825
Advanced Training: Cleveland Clinic, Cleveland, Ohio
Medical School: Northwestern University Medical School, Evanston, Ill.
Specialty Interests: medical oncology, biologic response modifiers, genitourinary cancer, drug development
Location: Main Campus

Peter Cohen, MD
Email: cohenp@ccf.org
Office: 216.445.3800
Appointments: 866.223.8100
Fax: 216.445.3805
Advanced Training: Warren G. Magnuson Clinical Center, NIH, Bethesda, Md.; Saint Vincent’s Hospital and Medical Center, New York, N.Y.
Medical School: Dartmouth Medical School, Hanover, N.H.
Specialty Interests: immuno-therapy
Location: Main Campus

Mellar Davis, MD
Email: davism6@ccf.org
Office: 216.445.4622
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Mayo Clinic, Rochester, Minn.; Riverside Methodist Hospital, Columbus, Ohio
Medical School: The Ohio State University College of Medicine and Public Health, Columbus, Ohio
Specialty Interests: pain management, cancer pain, palliative medicine, hospice, symptom control, supportive cancer care, cancer related fatigue, cancer anorexia and weight loss, lung cancer, paraproteinemias and amyloidosis
Location: Main Campus

Bassam Estfan, MD
Email: estfanb@ccf.org
Office: 216.445.9074
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Cleveland Clinic, Cleveland, Ohio
Medical School: Faculty of Medicine, Damascus University, Damascus, Syria
Specialty Interests: palliative medicine
Location: Main Campus

Jorge Garcia, MD
Email: garciak4@ccf.org
Office: 216.444.7774
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Beth Israel Deaconess Medical Center, Boston; University of California San Francisco Medical Center, San Francisco; Albert Einstein College of Medicine, New York, N.Y.
Medical School: Escuela Colombiana de Medicina, Santafe De Bogate, Columbia
Specialty Interests: genitourinary malignancies, clinical trials and experimental therapeutics
Location: Main Campus

Timothy Gilligan, MD
Email: gilligt@ccf.org
Office: 216.444.0391
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Dana-Farber Cancer Institute, Boston; Brigham & Women’s Hospital, Boston
Medical School: Stanford University School of Medicine, Stanford, Calif.
Specialty Interests: testicular cancer, bladder cancer, prostate cancer, kidney cancer, germ cell tumors, cancer survivorship, health disparities, prostate cancer in black men, health education, semenomias
Location: Main Campus

Terence Gutgsell, MD
Email: gutgsel@ccf.org
Office: 216.444.4022
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Cleveland Clinic, Cleveland, Ohio
Medical School: University of Kentucky College of Medicine, Lexington, Ky.
Specialty Interests: palliative medicine, development of palliative medicine program in community settings
Location: Main Campus

Richard Kim, MD
Email: kim3e@ccf.org
Office: 216.444.0293
Appointments: 866.223.8100
Fax: 216.444.9464
Advanced Training: Yale University School of Medicine, New Haven, Conn.; New York University Downtown Hospital, New York, N.Y.; University of Illinois at Chicago Hospitals, Chicago
Medical School: University of Miami Miller School of Medicine, Miami
Specialty Interests: GI oncology
Foreign Language: Korean
Location: Main Campus
Ruth Lagman, MD  
Email: lagmanr@ccf.org  
Office: 216.445.5060  
Appointments: 866.223.8100  
Fax: 216.444.9464  
Advanced Training: Cleveland Clinic, Cleveland, Ohio; University of Santo Tomas Hospital, Manila, Philippines; University of Connecticut Health Center Farmington, Conn.  
Medical School: University of Santo Tomas Faculty of Medicine & Surgery, Manila  
Specialty Interests: palliative medicine  
Location: Main Campus

Halle Moore, MD  
Email: mooreh1@ccf.org  
Office: 216.445.4624  
Appointments: 866.223.8100  
Fax: 216.444.9464  
Advanced Training: Hospital of University of Pennsylvania, Philadelphia; University Hospitals of Cleveland, Cleveland, Ohio  
Medical School: Case Western Reserve University, Cleveland, Ohio  
Specialty Interests: breast cancer, hormonal issues in breast cancer treatment, fertility after breast cancer treatment  
Location: Main Campus

Susan LeGrand, MD  
Email: legrand@ccf.org  
Office: 216.444.4523  
Appointments: 866.223.8100  
Fax: 216.444.9464  
Advanced Training: University of Arizona Cancer Center, Tucson, Ariz.; University of Texas Affiliated Hospitals, Houston  
Medical School: University of South Carolina School of Medicine, Columbia, S.C.  
Specialty Interests: palliative medicine, breast cancer, myeloma  
Location: Main Campus

Derek Raghavan, MD, PhD, FACP, FRACP  
M. Frank & Margaret Domiter Rudy Distinguished Chair, Chairman, Taussig Cancer Institute  
Email: raghavd@ccf.org  
Office: 216.445.6888  
Appointments: 866.223.8100  
Fax: 216.444.8685  
Advanced Training: Royal Marsden Hospital, Sutton, Surrey, England; Royal Prince Alfred Hospital, Sydney, Australia; University of Minnesota Medical School, Minneapolis, Minn.  
Medical School: University of Sydney-Faculty of Medicine, Sydney, Australia  
Specialty Interests: prostate cancer and prostatic disease, bladder cancer, testis cancer, geriatric oncology, and lung cancer  
Location: Main Campus

Tarek Mekhail, MD  
Email: mekhait@ccf.org  
Office: 216.445.1785  
Appointments: 866.223.8100  
Fax: 216.444.9464  
Advanced Training: Cleveland Clinic, Cleveland, Ohio; Royal College of Surgeons (Edinburgh and Dublin)  
Medical School: Cairo University Faculty of Medicine, Cairo, Egypt  
Specialty Interests: lung cancer, head and neck cancer, kidney cancer, development of novel agents  
Location: Main Campus

Brian Rini, MD  
Email: rinib2@ccf.org  
Office: 216.444.9567  
Appointments: 866.223.8100  
Fax: 216.444.9464  
Advanced Training: University of Chicago Hospitals, Chicago  
Medical School: The Ohio State University College of Medicine and Public Health, Columbus, Ohio  
Specialty Interests: genitourinary oncology, renal cell carcinoma, prostate cancer, anti-angiogenic therapy, immunotherapy  
Location: Main Campus

David Peerboom, MD  
Email: peerbmd@ccf.org  
Office: 216.445.6068  
Appointments: 866.223.8100  
Fax: 216.444.9464  
Advanced Training: Johns Hopkins Hospital, Baltimore, Md.; University Hospitals of Cleveland, Cleveland, Ohio  
Medical School: Virginia Commonwealth University Medical College, Richmond, Va.  
Specialty Interests: neuro-oncology, urologic malignancies, experimental therapeutics, lung cancer  
Location: Main Campus

Robert Pelley, MD  
Email: pelleyp@ccf.org  
Office: 216.445.6720  
Appointments: 866.223.8100  
Fax: 216.444.9464  
Advanced Training: University Hospitals of Cleveland, Cleveland, Ohio  
Medical School: University of Cincinnati College of Medicine, Cincinnati, Ohio  
Specialty Interests: gastrointestinal tumors (colon cancer, gastric cancer, pancreatic cancer, gall-bladder cancer, hepatoma, bile duct tumors, intestinal carcinoid tumors, desmoid tumors)  
Location: Main Campus

K. Mitchell Russell, MD  
Email: russellk@ccf.org  
Office: 216.445.3978  
Appointments: 866.223.8100  
Fax: 216.444.9464  
Advanced Training: Cleveland Clinic, Cleveland, Ohio; University of Cincinnati Medical Center/University Hospital, Cincinnati, Ohio  
Medical School: Indiana University School of Medicine, Indianapolis, Ind.  
Specialty Interests: hospice and palliative medicine  
Location: Main Campus
Marc Shapiro, MD  
Email: shapirm@ccf.org  
Office: 216.445.2067  
Appointments: 866.223.8100  
Fax: 216.444.9464  
Advanced Training: Temple University Hospital, Philadelphia; Emory University Hospital, Atlanta  
Medical School: Medical College of Ohio at Toledo, Toledo, Ohio  
Specialty Interests: solid tumor oncology  
Location: Main Campus

Arun D. Singh, MD  
Primary appointment: Cleveland Clinic Cole Eye Institute  
Email: singha@ccf.org  
Office: 216.445.9479  
Advanced Training: Wills Eye Hospital, Philadelphia; St. Luke’s Hospital, Bethlehem, Pa.; University of Florida College of Medicine, Gainesville, Fla.  
Medical School: Jawaharlal Institute of Post Graduate Medical Education and Research, Pondicherry, India  
Specialty Interests: retinoblastoma, uveal melanoma, eyelid and conjunctival tumors and von Hippel Lindau disease  
Location: Main Campus

Timothy P. Sprio, MD, FACP  
Chairman, Department of Regional Oncology  
Email: spriot@ccf.org  
Office: 216.476.7606  
Appointments: 216.476.7606  
Fax: 216.476.6967  
Advanced Training: University Hospitals of Cleveland, Cleveland, Ohio; University of Connecticut Health Center, Farmington, Conn.; Auckland University Hospital, Auckland, New Zealand  
Medical School: University of Western Australia School of Medicine, Nedlands, Western Australia  
Specialty Interests: hematology/oncology  
Location: Fairview, Lorain, Main Campus

Pierre Triozzi, MD  
Email: triozzp@ccf.org  
Office: 216.445.5141  
Advanced Training: Duke University Medical Center, Durham, N.C.  
Medical School: The Ohio State University College of Medicine and Public Health, Columbus, Ohio  
Specialty Interests: medical oncology, melanoma, hematology, experimental therapeutics, cancer vaccines  
Location: Main Campus

T. Declan Walsh, MD  
Section Head, Palliative Medicine and Supportive Care  
Email: walsht@ccf.org  
Office: 216.445.4171  
Appointments: 866.223.8100  
Fax: 216.445.6388  
Advanced Training: Saint Christopher’s Hospice, Sydenham, London; Saint Vincent’s Hospital—Dublin, Dublin; Bridgeport Hospital, Bridgeport, Conn.; Memorial Sloan-Kettering Cancer Center, New York, N.Y.; Newcastle Area Health Authority Hospitals, Newcastle-on-Tyne, United Kingdom; Royal Victoria Infirmary, Newcastle-on-Tyne, United Kingdom  
Medical School: University College of Dublin, Faculty of Medicine, Dublin  
Specialty Interests: cancer pain, symptom control, palliative medicine, hospice care, complications of cancer  
Location: Main Campus

Omer Koç, MD  
Email: koce@ccf.org  
Office: 216.839.2990  
Appointments: 216.839.2990  
Fax: 216.839.2975  
Advanced Training: University Hospitals of Cleveland, Cleveland, Ohio; Cleveland Clinic, Cleveland, Ohio  
Medical School: Istanbul Medical School, Istanbul  
Specialty Interests: hematology and medical oncology  
Foreign Language: Turkish  
Location: Beachwood, Hillcrest

Dale Cowan, MD, JD  
Email: cowand@ccf.org  
Office: 216.524.7979  
Appointments: 216.524.7979  
Fax: 216.524.8343  
Advanced Training: Med-MetroHealth Medical Center, Cleveland, Ohio; National Institute of Health, Rio de Janeiro, Brazil; Harvard College Cambridge, Mass.; Case Western Reserve University School of Law, Cleveland, Ohio  
Medical School: Harvard Medical School, Boston  
Specialty Interests: medical oncology  
Location: Beachwood, Hillcrest, Independence

Vinit Makkar, MD  
Co-Chair, Cleveland Clinic Cancer Center at Hillcrest Hospital  
Email: makkarv@ccf.org  
Office: 216.839.2990  
Fax: 216.839.2975  
Advanced Training: Fox Chase Cancer Center, Philadelphia; Temple University Hospital, Philadelphia; The Christ Hospital, Cincinnati, Ohio  
Medical School: Northeastern Ohio Universities College of Medicine, Rootstown, Ohio  
Specialty Interests: hematology and medical oncology  
Foreign Language: Hindi  
Location: Beachwood, Hillcrest

Cleveland Clinic Cancer Care is available throughout Ohio at family health centers and community hospitals.

Regional Oncology Staff

Timothy P. Sprio, MD, FACP  
Chairman, Department of Regional Oncology  
Email: spriot@ccf.org  
Office: 216.476.7606  
Appointments: 216.476.7606  
Fax: 216.476.6967  
Advanced Training: University Hospitals of Cleveland, Cleveland, Ohio; University of Connecticut Health Center, Farmington, Conn.; Auckland University Hospital, Auckland, New Zealand  
Medical School: University of Western Australia School of Medicine, Nedlands, Western Australia  
Specialty Interests: hematology/oncology  
Location: Fairview, Lorain, Main Campus
**Radiation Oncology**

440.312.4700

**Henry Blair, MD**
Co-Chair, Cleveland Clinic Cancer Center at Hillcrest Hospital
Email: hblair@ccf.org
Appointments: 440.312.4700
Fax: 440.312.5300
Advanced Training: The Christ Hospital, Cincinnati, Ohio; University Hospitals of Cleveland, Cleveland, Ohio
Medical School: University of Cincinnati College of Medicine, Cincinnati, Ohio
Specialty Interests: radiation oncology
Location: Hillcrest

**Anthony Mastroianni, MD, JD**
Email: mastroa@ccf.org
Appointments: 440.312.4700
Fax: 440.312.5300
Advanced Training: Cleveland Clinic, Cleveland, Ohio; University Hospitals of Cleveland, Cleveland, Ohio; Cleveland State University, Cleveland, Ohio
Medical School: Case Western Reserve University School of Medicine, Cleveland, Ohio
Specialty Interests: breast cancer, prostate cancer
Location: Hillcrest, Fairview

**Betty Obi, MD**
Email: obib@ccf.org
Appointments: 440.312.4700
Fax: 440.312.5300
Advanced Training: Mount Sinai Medical Center, Cleveland, Ohio; University of Texas M.D. Anderson Cancer Center, Houston
Medical School: Case Western Reserve University, Cleveland, Ohio
Specialty Interests: breast cancer
Location: Hillcrest, Main Campus

**Raj Bagai, MD**
Email: rabaga@ccf.org
Appointments: 216.476.7606
Fax: 216.476.6967
Advanced Training: University Hospitals of Cleveland, Cleveland, Ohio
Medical School: Northeastern Ohio Universities College of Medicine, Rootstown, Ohio
Specialty Interests: medical oncology
Foreign Language: Hindi
Location: Fairview, Lorain

**Hamed Daw, MD**
Email: hadaw@ccf.org
Appointments: 216.476.7606
Fax: 216.476.6967
Advanced Training: Cleveland Clinic, Cleveland, Ohio
Medical School: Universite Libre de Bruxelles, Brussels
Specialty Interests: medical oncology
Foreign Language: Arabic and French
Location: Fairview, Westlake

---

**Gyn Oncology**

440.312.5560

**Chad Michener, MD**
Email: michenc@ccf.org
Office: 216.445.0226
Appointments: 440.312.5560
Fax: 440.312.5562
Advanced Training: Cleveland Clinic, Cleveland, Ohio; Warren G. Magnuson Clinical Center, National Institutes of Health, Bethesda, Md.; Bethesda North Hospital, Cincinnati, Ohio
Medical School: Wright State University School of Medicine, Dayton, Ohio
Specialty Interests: gynecologic cancer surgery, ovarian cancer screening and treatment, molecular basis of gynecologic cancers, laparoscopic surgery
Location: Hillcrest

**Gary Schnur, MD**
Email: schnurg@ccf.org
Office: 216.839.2990
Fax: 216.839.2975
Advanced Training: University of Michigan Health System, Ann Arbor, Mich.; University of Wisconsin Hospital and Clinic, Madison, Wisc.
Medical School: Albany Medical College, Albany, New York
Specialty Interests: medical oncology, breast cancer, lymphoma
Location: Beachwood, Hillcrest

---

**Fairview Hospital**

216.476.7606

**Carmen Vermont, MD**
Email: cvermont@ccf.org
Appointments: 440.312.4700
Fax: 440.312.5300
Advanced Training: Duke University, Durham, N.C.; Emergency Care Hospital, Lasi, Romania; St. Vincent’s Hospital and Medical Center, New York, C.I. Parhon University Hospital, Lasi, Romania; University Hospital SUNY Health Science Center at Syracuse, Syracuse, N.Y.
Medical School: Universite de Medicina Si Farmacie Faculty of Medicine, Lasi, Romania
Specialty Interests: breast cancer, lymphoma and pediatric radiation oncology
Location: Hillcrest
Kevin Kerwin, MD  
Email: kerwink@ccf.org  
Office: 216.476.7606  
Appointments: 216.476.7606  
Fax: 216.476.6967  
Advanced Training: William Beaumont Hospital-Royal Oak, Royal Oak, Mich.; University of Wisconsin Hospital and Clinic, Madison, Wis.; Oakwood Hospital and Medical Center, Dearborn, Mich.  
Medical School: Medical College of Ohio at Toledo, Toledo, Ohio  
Specialty Interests: medical oncology  
Location: Fairview, Lorain

Richard Drake, MD  
Email: draker2@ccf.org  
Office: 216.476.7540  
Appointments: 216.476.7540  
Fax: 216.476.7420  
Advanced Training: University of Texas Southwestern Medical Center at Dallas, Dallas; Detroit Medical Center, Detroit  
Medical School: Wayne State University School of Medicine, Detroit  
Specialty Interests: gynecologic oncology, ovarian cancer, endometrial cancer, cervical cancer, laparoscopy  
Location: Fairview, Main Campus

Peter Rose, MD  
Email: roosep@ccf.org  
Office: 216.476.7540  
Appointments: 216.476.7540  
Fax: 216.476.7420  
Advanced Training: Roswell Park Cancer Institute, Buffalo, N.Y.; The Ohio State University Hospitals, Columbus, Ohio; Vanderbilt University, Nashville, Tenn.  
Medical School: Boston University School of Medicine, Boston  
Specialty Interests: gynecologic oncology  
Location: Fairview, Hillcrest, Main Campus

Byron Coffman, MD  
Email: coffmab@ccf.org  
Office: 216.524.7979  
Fax: 216.524.8343  
Advanced Training: University Hospitals of Cleveland, Cleveland, Ohio  
Medical School: Case Western Reserve University School of Medicine, Cleveland, Ohio  
Specialty Interests: medical oncology  
Location: Independence

Dale Cowan, MD, JD  
Email: cowand@ccf.org  
Office: 216.524.7979  
Fax: 216.524.8343  
Advanced Training: MetroHealth Medical Center, Cleveland, Ohio; NIH, Rio de Janeiro, Brazil; Harvard College Cambridge, Mass.; Case Western Reserve University School of Law, Cleveland, Ohio  
Medical School: Harvard Medical School, Boston  
Specialty Interests: medical oncology  
Location: Beachwood, Hillcrest, Independence

Bachar Dergham, MD  
Email: derghabi@ccf.org  
Office: 216.524.7979  
Fax: 216.524.8343  
Advanced Training: Cleveland Clinic, Cleveland, Ohio; Mount Sinai Medical Center, Cleveland, Ohio  
Medical School: Tishreen University Medical School, Lattakia  
Specialty Interests: medical oncology  
Location: Independence

Margaret (Peggy) Kranyak, MD  
Medical Director of Radiation Oncology, Fairview  
Email: kranyap@ccf.org  
Office: 216.476.7838  
Fax: 216.476.7612  
Advanced Training: University of Virginia Health Sciences Center, Va.  
Medical School: University of Cincinnati College of Medicine, Cincinnati, Ohio  
Specialty Interests: prostate cancer, including I-125 implants, breast cancer, head and neck oncology, general oncology  
Location: Fairview

Anthony Mastroianni, MD, JD  
Email: mastmra@ccf.org  
Office: 216.476.7838  
Fax: 216.476.7612  
Advanced Training: Cleveland Clinic, Cleveland, Ohio; University Hospitals of Cleveland, Cleveland, Ohio; Cleveland State University, Cleveland, Ohio  
Medical School: Case Western Reserve University School of Medicine, Cleveland, Ohio  
Specialty Interests: breast cancer, prostate cancer  
Location: Fairview, Hillcrest
For the most current list of staff and services, visit clevelandclinic.org/cancerstaff
Osei Owusu, MD  
Email: owusuoc@ccf.org  
Office: 440.878.2500  
Advanced Training: Boston Medical Center, Boston; Newark Beth Israel Medical Center, Newark, N.J.  
Medical School: University of Science & Technology; School of Medical Sciences, Kumasi, Ghana  
Specialty Interests: medical oncology  
Foreign Language: Tui  
Location: Strongsville

CANCER CONSULT 2008 SPECIAL EDITION
CANCER GENOMIC MEDICINE

Charis Eng, MD, PhD
Chair, Genomic Medicine Institute
Email: enge@ccf.org
Office: 216.444.3440
Appointments: 216.445.5686
Advanced Training: Brigham & Women’s Hospital, Boston; Dana-Farber Cancer Institute, Boston; University of Cambridge-School of Clinical Medicine; Beth Israel Deaconess Medical Center, Boston
Medical School: University of Chicago Pritzker School of Medicine, Chicago
Specialty Interests: clinical cancer genetics, cancer genomic medicine, genetics of adult onset disorders
Location: Main Campus

Cheryl Scacheri, MS, CGC
Director
Email: scachec@ccf.org
Office: 216.444.6418

Emily Edelman, MS, CGC
Email: edelmae@ccf.org
Office: 216.444.8088

Shanna Gustafson, MS, CGC
Email: gustafs@ccf.org
Office: 216.444.8024

GENETIC COUNSELING

Jaroslaw Maciejewski, MD, PhD
Email: maciej@ccf.org
Office: 216.445.5962
Appointments: 216.444.6833
Fax: 216.636.2498
Advanced Training: National Heart, Lung and Blood Institute, Bethesda, Md.; University of Nevada School of Medicine, Reno, N.Y.
Medical School: Chartier Medical School, Humboldt University, Berlin
Specialty Interests: bone marrow failure syndromes including aplastic anemia, myelodysplastic syndrome, large granular lymphocyte leukemia, paroxysmal nocturnal hemoglobinuria, autoimmune neutropenia, pure red cell aplasia and other refractory anemias, cytopenias
Foreign Language: Polish, German, Russian
Location: Main Campus

Mohamed Orliff, PhD
Office: 216.444.8697
Specialty Interests: cancer genomic medicine
Location: Main Campus

Kristin Waite, PhD
Office: 216.445.7845
Graduate School: Bowman Gray School of Medicine, Winston-Salem, N.C.
Specialty Interests: cancer genomic medicine
Location: Main Campus

Bin Zhang, PhD
Office: 216.444.0884
Graduate School: Michigan State University, East Lansing, Mich.
Specialty Interests: cancer genomic medicine
Location: Main Campus

CANCER RESEARCH

Ernest Borden, MD
Email: bordene@ccf.org
Office: 216.444.8183
Appointments: 216.444.6833
Fax: 216.636.2498
Advanced Training: Johns Hopkins Hospital, Baltimore, Md.; Duke University Medical Center, Durham, N.C.; Hospital of University of Pennsylvania, Philadelphia
Medical School: Duke University School of Medicine, Durham, N.C.
Specialty Interests: melanoma, new cancer therapies including interferons, vaccines and antibodies
Location: Main Campus

Ram Ganapathi, PhD
Email: ganapar@ccf.org
Office: 216.444.2085
Fax: 216.444.7115
Advanced Training: Dana-Farber Cancer Institute, Boston; University of Miami Hospitals and Clinics, Miami
Graduate School: Massachusetts College of Pharmacy and Health Sciences, Boston
Specialty Interests: clinical pharmacology and experimental cancer chemotherapy
Location: Main Campus

Daniel Lindner, MD, PhD
Email: lindned@ccf.org
Office: 216.445.0548
Fax: 216.636.2498
Advanced Training: Oregon Health Sciences University Hospital Portland, Ore.
Medical School: Georgetown University, Washington, D.C.
Graduate School: Medical College of Wisconsin, Milwaukee, Wisc.
Specialty Interests: hematology and oncology molecular therapeutics
Location: Main Campus

Location: Main Campus

Yogen Saunthararajah, MD
Email: saunthy@ccf.org
Office: 216.444.8170
Appointments: 216.444.6833
Fax: 216.636.2498
Advanced Training: National Institutes of Health, Bethesda, Md.; Duke-NIH MPH Program; University of Hawaii, Hawaii
Medical School: The University of Wales College of Medicine, Wales, United Kingdom
Specialty Interests: myelodysplastic syndrome, acute myeloid leukemia, sickle cell, thalassemia
Location: Main Campus

Pierre Triozzi, MD
Email: triozzi@ccf.org
Office: 216.445.5141
Appointments: 216.444.6833
Fax: 216.636.2498
Advanced Training: Duke University Medical Center, Durham, N.C.
Medical School: The Ohio State University College of Medicine and Public Health, Columbus
Specialty Interests: medical oncology, melanoma, hematology, experimental therapeutics, cancer vaccines
Location: Main Campus

For the most current list of staff and services, visit clevelandclinic.org/cancerstaff
New Staff

**Nathan Pennell, MD, PhD**, has joined Taussig Cancer Institute's Department of Solid Tumor Oncology.

Dr. Pennell received his medical and doctorate degrees from the University of Florida College of Medicine, Gainesville, Fla. He completed his residency at Brigham & Women’s Hospital, Boston, and his fellowship at Dana-Farber Cancer Institute, Boston.

His specialty interests include lung cancer, esophageal cancer, mesothelioma and clinical trials.

**Cristina Rodriguez, MD**, has joined Taussig Cancer Institute’s Department of Solid Tumor Oncology.

Dr. Rodriguez received her medical degree from the University of the Philippines College of Medicine, Philippines. She completed her residency and fellowship at Cleveland Clinic.

Her specialty interests include head and neck cancer, and esophageal cancer.

**Stephen Smith, MD**, has joined Taussig Cancer Institute’s Department of Hematologic Oncology and Blood Disorders.

Dr. Smith received his medical degree from the University of Southern California Keck School of Medicine, Los Angeles. He completed his residency at Los Angeles Community Hospital and his fellowship at Cleveland Clinic.

His specialty interests include non-Hodgkin lymphoma, targeted therapy, and benign and malignant hematologic diseases.

*Contact any of our new staff by calling 866.223.8100.*
Critical to Taussig Cancer Institute's success is the complete partnership established with all of Cleveland Clinic's nationally recognized teams of cancer care specialists. The following leaders from other Cleveland Clinic institutes collaborate with Taussig Cancer Institute staff to provide the most advanced oncologic care to our patients:

**Glickman Urological Institute**
Andrew Novick, MD
Inderbir Gill, MD
Eric Klein, MD
Steven Campbell, MD, PhD
Kenneth W. Angermeier, MD
Jihad Kaouk, MD
Andrew Stephenson, MD
Drogo Montague, MD

**Digestive Disease Institute**
Victor Fazio, MD
James Church, MD
Ian Lavery, MD, BS
Feza Remzi, MD

**Neurological Institute**
Gene Barnett, MD
Michael Vogelbaum, MD, PhD
Lilyana Angelov, MD
Robert Weil, MD
Glen H. Stevens, DO, PhD
Bruce Cohen, MD
Joung Lee, MD
Tanya Tekautz, MD

**Obstetrics and Gynecology and Women's Health Institute**
Joseph Crowe, MD
Tommaso Falcone, MD
Chad Michener, MD
Peter Rose, MD
Jerome Belinson, MD

**Orthopaedic & Rheumatological Institute**
Steven Leitman, MD
Michael Joyce, MD

**Surgery Institute**
Allan Siperstein, MD
Matthew R. Walsh, MD

**Heart and Vascular Institute**
Thomas Rice, MD
David Mason, MD
Sudesh Murthy, MD

**Cole Eye Institute**
Arun Singh, MD

**Pediatric Institute and Children’s Hospital**
Gregory Plautz, MD
L. Kate Gowans, MD
Eric Kodish, MD
Michael G. Lavien, MD
Tanya Tekautz, MD

*For more information, please call 866.223.8100.*
Selected Publications
2007-2008

Journal Publications


Selected Publications
2007-2008 (continued)


Bae SI, Cheriyath V, Jacobs BS, Reu FJ, Borden EC. Reversal of methylation silencing of Apo2L/TRAIL receptor 1 (DR4) expression overcomes resistance of SK-MEL-3 and SK-MEL-28 melanoma cells to interferons (IFNs) or Apo2L/TRAIL. *Oncogene.* 2008 Jan 17;27(4):490-498.


Selected Publications
2007-2008 (continued)


Selected Publications
2007-2008 (continued)


Selected Publications
2007-2008 (continued)


Davis MP. Cancer constipation: are opioids really the culprit? *Support Care Cancer*. 2008 May;16(5):427-429.


Davis MP. Cancer constipation: are opioids really the culprit? *Support Care Cancer*. 2008 May;16(5):427-429.


CANCER CONSULT

2008 SPECIAL EDITION

Selected Publications

2007-2008 (continued)


Selected Publications

2007-2008 (continued)


Selected Publications
2007-2008 (continued)


Selected Publications
2007-2008 (continued)


Selected Publications
2007-2008 (continued)


Macconaille LE, Aldred MA, Lu X, LaFramboise T. Toward accurate high-throughput SNP genotyping in the presence of inherited copy number variation. *BMC Genomics.* 2007;8:211.


Macklis RM. Frontline Postchemotherapy Consolidation With 90Y-Zevalin RIT: Finally an Ideal Role for RIT in Lymphoma Management? *Amer Journal of Hematology/Oncology* 2008: 2-4


Selected Publications
2007-2008 (continued)


Selected Publications
2007-2008 (continued)


Selected Publications

2007-2008 (continued)


Raghavan D. A wealth of riches in RCC treatment: How do we avoid ‘devaluing the dollar’? *Oncology (Williston Park).* 2007 Sep;21(10):1187-1190.


Selected Publications

2007-2008 (continued)


Selected Publications
2007-2008 (continued)


Selected Publications

2007-2008 (continued)


Selected Publications
2007-2008 (continued)


Selected Publications
2007-2008 (continued)

**Book chapters and whole books**


Selected Publications
2007-2008 (continued)


Selected Publications
2007-2008 (continued)


Selected Publications
2007-2008 (continued)


Patient Support Services

Cleveland Clinic Taussig Cancer Institute specialists are dedicated to helping patients faced with the many challenges of their cancer experience. We offer many services beyond medical care:

**Support Groups** – providing patients, families, and friends an opportunity to have their concerns, fears, and hopes reaffirmed by others who are experiencing similar life challenges. Support groups are led by our cancer institute’s oncology social workers, oncology nurses and psychologists who are specialists in providing reliable and helpful information in an atmosphere of encouragement.

**Reflections Wellness Program** – offering a variety of complementary and aesthetic services to Cleveland Clinic Taussig Cancer Institute patients. All treatments are designed to reduce anxiety and promote healing while patients are undergoing cancer treatments and leave them feeling their best.

**Late Effects Clinic** – following up with cancer survivors years after successful treatment to stave off or detect minor or serious side effects as early as possible.

**Fertility Preservation for Cancer Patients** – offers options, prior to treatment, for cancer patients who hope to eventually become parents.

**Scott Hamilton CARES Initiative** – the Scott Hamilton Cancer Alliance for Research, Education and Survivorship (CARES) initiative, created by the champion figure skater after successful treatment at Cleveland Clinic Taussig Cancer Institute, promotes cancer awareness, education and research.

**Chemocare.com** – developed jointly by Taussig Cancer Institute and the Scott CARES initiative, this website takes the mystery out of chemotherapy.

**The 4th Angel Mentoring Program** – a key component of the Scott CARES initiative, this patient-mentoring program matches newly diagnosed patients with trained volunteers who are cancer survivors.

**Cancer Answer Line** – For questions or concerns about cancer, or to schedule a second opinion, Monday through Friday, 8:30 a.m. to 4:30 p.m., call 216.444.7923 or toll-free 866.223.8100.

---

**Helen Meyers McLoraine Patient Resource Center**

Staffed by two clinical nurse specialists and an administrative coordinator, the Patient Resource Center is located in the northeast corner of Taussig Cancer Institute and is open from 8 a.m. to 5 p.m., Monday through Friday.

Resources include:

- Free pamphlets and informational brochures
- Computer terminals for searches
- A room for nurse/patient discussions, subcutaneous self-injection teaching and educational video viewing
- Listings and registrations for support groups and other patient-related events
- Listings of resources, such as wigs, transportation and lodging

**Medical Concierge Program** – a complimentary service for patients who travel to Cleveland Clinic from outside Ohio. For more information: call 800.223.2273, ext. 55580, visit clevelandclinic.org/services, or email medicalconcierge@ccf.org.
Institute Locations

**Cleveland Clinic** (Main Campus)
Taussig Cancer Institute
9500 Euclid Ave./R35
Cleveland, OH 44195
216.444.7923

**Beachwood Family Health and Surgery Center**
26900 Cedar Road
Beachwood, OH 44122
216.839.3000 or 800.801.2233

**Fairview Hospital**
18101 Lorain Avenue
Cleveland, OH 44111
216.476.7000

**Hillcrest Hospital**
6780 Mayfield Road
Mayfield Heights, OH 44124
440.312.4500

**Independence Cancer Center**
6100 Westcreek Road, Ste. 15 & 16
Independence, OH 44131
216.524.7979, Medical Oncology
216.447.9747, Radiation Oncology

**Lorain Family Health and Surgery Center**
5700 Cooper Forest Park Road
Lorain, OH 44053
440.204.7400 or 800.272.2676

**Strongsville Family Health and Surgery Center**
16761 South Park Center
Strongsville, OH 44136
440.878.2500 or 800.239.1098

**Westlake Family Health Center**
30033 Clemens Road
Westlake, OH 44145
440.899.5555 or 800.599.7771

**Willoughby Hills Family Health Center**
2570 SOM Center Road
Willoughby Hills, OH 44094
440.943.2500 or 800.807.2888

**Wooster Family Health Center**
1740 Cleveland Road
Wooster, OH 44691
330.287.4500 or 800.451.9870

Referrals

**General Patient Referral**
24/7 hospital transfers or physician consults
800.553.5056

**Taussig Cancer Institute Appointments/Referrals**
216.444.7923 or toll-free 866.223.8100

**Bone Marrow Failure Clinic Appointments/Referrals**
This subspecialty clinic offers expertise in aplastic anemia, myelodysplasia, single-lineage cytopenias, paroxysmal nocturnal hemoglobinuria, large granular lymphocytic leukemia and other immune-mediated hematologic diseases.
216.445.5962 or 800.223.2273, ext. 55962

**Radiation Oncology Appointments/Referrals**
216.444.5571 or 800.223.2273, ext. 4557

Online Access to Your Patient’s Treatment Progress

Whether you are referring from near or far, our new eCleveland Clinic service, DrConnect, can streamline communication from Cleveland Clinic physicians to your office. This new online tool offers you secure access to your patient’s treatment progress at Cleveland Clinic. With one-click convenience, you can track your patient’s care using the secure DrConnect Web site.

To establish a DrConnect account, visit eclevelandclinic.org or e-mail drconnect@ccf.org.
Dear Colleagues,

I am very pleased to present the first Cleveland Clinic Taussig Cancer Institute’s Cancer Consult Special Edition.

I hope you enjoy this more in-depth look at cancer care throughout Cleveland Clinic, as we continue our mission of providing innovative, high quality care through our commitment to meticulous clinical practice, augmented by a portfolio of clinical, translational and basic research. This special edition includes not only the latest research that you have come to expect in Cancer Consult, but also provides a complete overview of the cutting-edge capabilities and programs that are available at Taussig Cancer Institute. As you will see in the pages that follow, we have had a busy year with more than 300 publications, more than 250,000 patient visits and the acquisition of many new peer-reviewed grants, contracts, inventions and increasing involvement of our patients in clinical trials.

We are very proud of our selection by the Leukemia and Lymphoma Society to develop a paradigm for moving clinical trials from a center of excellence and research to community practices. Our Community Cancer programs have been recertified by the American College of Surgeons Commission on Cancer, and Fairview Hospital’s Breast Health Center will be the first in the nation to receive a new accreditation. As a result, Cleveland Clinic is introducing another international training course on the Gamma Knife, and our team participating in a series of post- ASCO and ASH educational meetings in the U.S. and abroad. The Moll Cancer Pavilion Annual Meeting continues having conducted another successful international training course on the Gamma Knife, and our team participating in a series of post- ASCO and ASH educational meetings in the U.S. and abroad. The Moll Cancer Pavilion Annual Meeting continues to provide another forum for community physician education in Oncology, as do our regular Grand Rounds sessions that are broadcast to many sites.

We have been very active in education, with Dr. Rob Dreicer having served as Chairman of the Program Committee for the ASCO Genitourinary Cancer Symposium, Drs. Jaroslaw Maciejewski and Mikkael Sekeres having hosted an international meeting on Progress in Myelodysplastic Syndromes, Dr. John Suh and colleagues having conducted another successful international training course on the Gamma Knife, and our team participating in a series of post- ASCO and ASH educational meetings in the U.S. and abroad. The Moll Cancer Pavilion Annual Meeting continues to provide another forum for community physician education in Oncology, as do our regular Grand Rounds sessions that are broadcast to many sites.

I hope that you find this information to be interesting and helpful in your practice.

Please do not hesitate to contact us with questions or for more information on how we can help you as you care for your patients. Our entire staff remains committed to our core ideology of Cleveland Clinic: “Patients First.”

Sincerely,

Derek Raghavan, MD, PhD
Chairman, Taussig Cancer Institute
M. Frank & Margaret Domiter Rudy Distinguished Chair

Introducing The Future of Healthcare
Innovative new buildings improve patient access, experience.

This fall, Cleveland Clinic is introducing the future of healthcare with the opening of the Sydell and Arnold Miller Family Pavilion and the Glickman Tower.

These buildings, which represent the largest construction and philanthropy project in Cleveland Clinic history, embody the pioneering spirit and commitment to quality that define Cleveland Clinic. These structures are a tangible expression of institutes, our new model of care that organizes patient services by organ and disease. At 1 million square feet, the Miller Family Pavilion is the country’s largest single-use facility for heart and vascular care. The 12-story Glickman Tower, new home to the Glickman Urological & Kidney Institute, is the tallest building on Cleveland Clinic’s main campus. Both will help us improve patient experience by increasing our capacity and by consolidating services, so patients can stay in one location for their care.

With 278 private patient rooms, more than 90 ICU beds and a combined total of nearly 200 exam rooms and more than 90 procedure rooms, patients will have faster access to Cleveland Clinic cardiac and urological services.

Critical Care Transport
Cleveland Clinic is able to go to new lengths to transport highly complex patients, including those who are critically ill, with the addition of two medical transport jets. The aircraft went into service on July 1, 2008 and are able to reach Cleveland Clinic patients in need wherever they are, even overseas.

In the first four weeks of service, the team has traveled to six states and three continents. Critical Care Transport Team constellation is customized based on the needs of the individual patient and can serve infants, children and adults. Sophisticated communications allow for in-flight interaction with the referring doctor as well as any specialty at Cleveland Clinic. These dedicated jets join our fleet of critical care transportation vehicles, which includes mobile intensive care units and helicopters.

For details, including a virtual tour, please visit meetthebuildings.com.

Dial 216.444.8302 or 800.553.5056, option 3. One call will put you directly in contact with a receiving physician to initiate transport.

For more information, visit cleveland-clinic.org/cct.
Cancer Consult  |  Special Edition 2008

Cancer Consult provides information from Cleveland Clinic Cancer Institute specialists about innovative research and diagnostic and management techniques.

Please direct correspondence to
Brian Rini, MD, Medical Editor
rinib2@ccf.org
Taussig Cancer Institute/135
Cleveland Clinic
9500 Euclid Avenue
Cleveland, OH 44195
Cleveland Clinic: Taussig Cancer Institute annually serves more than 26,000 cancer patients. More than 250 cancer specialists are committed to researching and applying the latest, most effective techniques for diagnosis and treatment to achieve long-term survival and improved quality of life for all cancer patients. Taussig Cancer Institute is part of Cleveland Clinic, an independent, not-for-profit, multispecialty academic medical center.

Cancer Consult Editorial Board
Brian Rini, MD, Medical Editor
Dennis Raghaven, MD, PhD, Chairman, Taussig Cancer Institute
Brian Bolwell, MD, Chairman, Hematologic Oncology and Blood Disorders
Robert Dreicer, MD, Chairman, Solid Tumor Oncology
Timothy Sims, MD, Chairman, Regional Oncology
John Suh, MD, Chairman, Radiation Oncology
Gene Barnett, MD, Director, Brain Tumor and Neuro-Oncology Center
Eric Klein, MD, Head, Urologic Oncology, Glickman Urological & Kidney Institute

Managing Editor
Ann Burgo
Art Director
Michael Vans
Designer
Amy Buskey-Wood
Photography
Russell Lee, Cleveland Clinic Research Institute, Steve Tarrant, Yu-Kwan Lee

Taussig Cancer Institute Administrator
Kim Bell, BSN, MBA
Marketing
Lori Schmitt, RN, Bill Saffin, PhD, Melissa Lowes

Cancer Consult is written for physicians and should be relied upon for medical education purposes only. It does not provide a complete overview of the topics covered and should not replace the independent judgment of a physician about the appropriateness or risks of a procedure for a given patient.

© 2008 The Cleveland Clinic Foundation
07-298-016

clevelandclinic.org/cancerconsult