

Strong Memorial Hospital Cancer Committee Report 2010



WILMOT
CANCER CENTER



UNIVERSITY of
ROCHESTER
MEDICAL CENTER

MEDICINE of THE HIGHEST ORDER

Annual Report 2010: Chairman's Report



I am pleased to share this 2010 annual report of the Cancer Committee at the University of Rochester Medical Center's Strong Memorial Hospital, home of the James P. Wilmot Cancer Center. 2010 was a year of continued growth and achievement for the Wilmot Cancer Center, both in the areas of research and patient care.

The growth that we have achieved is both literal and figurative. In late 2010, construction began on an exciting vertical expansion project that will add three additional floors to our cancer center and allow us to expand patient care and research programs. The inpatient Hematology/Oncology unit and the Bone Marrow Transplant unit will be relocated to the Wilmot Cancer Center, transforming it into a comprehensive cancer hospital with more efficient, centralized services for our patients.

Our nationally-recognized research is poised for growth as well. In 2010, we began to explore a regional scientific collaboration with Roswell Park Cancer Institute (RPCI). Leaders of the two institutions have approved the framework for a partnership that will focus on shared research activities. A collaboration between upstate New York's two largest cancer research facilities could result in a scientific

powerhouse, enhancing faculty recruitment, funding, and the development of larger research studies. While the goal would be to create cross-institutional teams that can attract more and larger federal research grants, ultimately the collaborative work would be expected to lead to discoveries that would improve patient care and fuel further research.

The Commission on Cancer, from which we received accreditation in 2009, believes that the best cancer care is multidisciplinary in nature and that approach is central to the mission of the clinicians and researchers at the Wilmot Cancer Center. Surgeons, medical and radiation oncologists, diagnostic radiologists, pathologists and other cancer specialists collaborate to provide an appropriate, customized approach to treatment for each and every patient.

The expansion of our building, which opened in 2008, further enhances our ability to provide the best in multidisciplinary cancer care to our patients while providing an environment that is welcoming, warm and conducive to healing. The state of the art facility has helped us provide world class care and service to our patients while remaining the busiest cancer program in the region, with nearly 24,000 patient visits in our outpatient clinics at the Wilmot Cancer Center alone.

We are the only cancer program in the region that provides multidisciplinary clinics for all of the major cancer sites, allowing us to evaluate each patient and determine the best possible combination and sequence of therapies tailored to their specific needs. In 2009, there were 89 Cancer Center Clinical trials open, accruing 390 patients. This accounts for an accrual rate of 12.5 percent using the 2008 registry data for total number of cases, a rate deemed as “phenomenal” by the ACS. More importantly, it reflects our commitment to advance cancer care and provide patients with access to promising, cutting-edge treatments. This commitment is also exemplified by a marked increase in our cancer research funding as our basic and translational research programs continue to expand, enabling us to not only provide the best of the current cancer therapies, but to find better treatments, and ultimately find a cure.

Under the leadership of Richard Fisher, M.D., Wilmot Cancer Center director, Jonathan Friedberg, MD, chief of the division of Hematology/Oncology, Yuhchyan Chen, M.D., Ph.D., interim Chair of the Department of Radiation Oncology, myself, and my colleagues in the various surgical departments, we continued in 2010 to advance cancer care for those whom we serve:

- The Comprehensive Breast Care Center at the University of Rochester Medical Center’s James P. Wilmot Cancer Center was named a Center of Excellence for Breast Imaging by the American College of Radiology, a prestigious three-year accreditation from the ACR.
- University of Rochester Medical Center physicians performed upstate New York’s first radioembolization procedure for primary liver cancer. This technique combats the tumor in patients who can not be treated with surgery and are awaiting an organ transplant. At the time, this procedure was only available at two other sites in New York and 50 select hospitals in the United States.
- Doctors at University of Rochester Medical Center became the first in upstate New York to incorporate the precision and dexterity of a surgical robot to remove cancerous tumors in the mouth and throat. The first transoral robotic procedure – a partial glossectomy – was performed by surgeon Matthew Miller, M.D.

I am extremely proud and privileged to be part of the world class team at the Wilmot Cancer Center. By providing multidisciplinary, collaborative and specialized care, we are ensuring that those who

entrust their cancer care to our talented team are getting the most effective, customized treatment plan for their particular disease. The combination of state-of-the-art treatments, cutting-edge research, and access to a multitude of promising clinical trials, allows our patients to have the best possible outcome while maintaining a high quality of life. While we have achieved much in 2009, we will continue our commitment to continuous improvement and further strengthen our role as the cancer-care leader in our community and region.

Sincerely,



Kristin Skinner, MD
Chief, Division of Surgical Oncology
Chair, Cancer Committee

Annual Report 2010: Cancer Program Report

I Introduction

The University of Rochester Medical Center and the James P. Wilmot Cancer Center, one of the Medical Center's strategic centers of excellence, has significant resources and expertise to provide quality care to patients with cancer. Significant among these resources is the strong collaboration and support among oncology specialists and a highly skilled group of oncology nurses, social workers, pharmacists and support staff.

Strong Memorial Hospital is the Rochester and Finger Lakes region's largest hospital with 739 beds and a component of the highly respected University of Rochester Medical Center. Clinical faculty members provide a broad range of services, many recognized as best in the nation. As an academic hospital, our patients have access to the latest treatments before they are widely available. In addition to its notable programs of clinical excellence, Strong Memorial Hospital has twice earned designation as an ANCC Magnet hospital of Nursing Excellence. SMH is also

approved by the Joint Commission on Accreditation of Health Care Organizations.

The Wilmot Cancer Center has received accreditations from prestigious organizations for its quality care. The program is a designated Center of Excellence by Aetna, United Resource Networks, Optum Health, MVP, Strategic Health Development Corporation and a Blue Distinction Center for Transplant. It is a Blue Distinction Center for Rare Cancers and holds accreditation from the American College of Radiology.



II Commitment To Multidisciplinary Care

Wilmot Cancer Center physicians and staff believe multidisciplinary care is the gold standard for high-quality cancer care. Patients benefit from the expertise of a variety of oncology specialists who discuss patients' stage of disease and develop treatment plans at one of our many disease-specific multidisciplinary conferences and clinics. As Figure 1 shows, the major cancer sites have frequent multidisciplinary conferences. Other diseases or programs, such as palliative care and pediatric oncology, also have regularly scheduled multidisciplinary conferences.

Our review demonstrates that in 2009, more than 2,070 patients were presented at multidisciplinary conference (approximately 64 percent of the analytic cancer cases), 95 percent of those were presented on a prospective basis, meaning that the discussion

and recommendations were made in advance of the patient's treatment.

III Clinical Research

The Wilmot Cancer Center manages a robust portfolio of clinical trials, consisting of cooperative group trials through the Southwest Oncology Group, investigator initiated trials, and industry sponsored studies.

Scientific integrity and human subjects protection are chief priorities of the Wilmot Cancer Center's research program. Each protocol is subject to a review for scientific appropriateness by a committee of peers. Once it passes this review, it is studied by the Medical Center Research Subjects Review Board, which monitors protection of patients who are candidates for or already enrolled in research protocols.

Investigators are assigned study coordinators who are responsible to insure the integrity of the study requirements, collect, record and submit data to study sponsors and oversee all regulatory issues related to the study. A research nurse works with study

coordinators to ensure that patients are properly educated and informed about the protocols. The nurse also provides education to members of the nursing staff about investigational therapy and study requirements so that administration of these agents is performed in a safe manner.

In 2010, there were 84 Cancer Center Clinical trials open, accruing 479 patients. This accounts for an accrual rate of 14.9 percent, using the 2009 registry data for total number of analytic cases (N=3,213).

IV Patient Education and Support

Support services at Wilmot Cancer Center are considered vital to providing comprehensive care for our patients and their caregivers. Wilmot Cancer Center's team of oncology social workers, its Luellen Patient and Family Resource Center and ongoing community collaboration initiatives support the needs of those in treatment as well as those seeking information about cancer.

Regarded as members of the patient's medical team, social workers can provide a variety of services for patients throughout all phases of treatment. Meeting with patients upon diagnosis informs them of the spectrum of services available with the objective of addressing emotional and practical needs. Social workers are licensed professionals who can assist with the provision of psychosocial assessment, supportive counseling, allocation of community resources, continuity of care between inpatient and outpatient settings, assessing financial stressors and facilitating concrete needs (such as transportation and lodging) during treatment.

Wilmot Cancer Center has social workers in all clinical areas, including Blood and Marrow Transplant service, Comprehensive Breast Care Center, gynecologic oncology, hematology oncology multidisciplinary clinics, radiation oncology, inpatient medical and surgical oncology units as well as the palliative care service.

The Luellen Patient and Family Resource Center was developed to serve as the hub of patient education and information. It is home to the Hermet library collection, relevant brochures for local and national cancer resources, as well as disease-specific information. A comfortable and versatile space, the resource center is a home for support and educational groups, as well as an ongoing lecture series, all open to the community.

Wilmot Cancer Center Multidisciplinary conference schedule, Major disease sites *(Figure 1)*

| | | |
|------------------|-----------------------|------------|
| Solid tumor | 2nd and 4th Thursday | noon |
| Breast | Mondays | 7:30 a.m. |
| Thoracic | Thursdays | 4:00 p.m. |
| Genitourinary | 1st and 3rd Wednesday | 12:30 p.m. |
| Gastrointestinal | Tuesdays | 5:00 p.m. |
| Lymphoma | Tuesday | 12:30 p.m. |
| Myeloid | Mondays | noon |

Annual Report 2010: Cancer Program Report

Our monthly on-campus support groups facilitated by Wilmot Cancer Center staff include:

- Adult Brain Tumor Network
- Bladder Cancer Support Group
- Brain Tumor Caregivers Support Group
- Caregiver Support Group
- Advanced Insights: A support group for women with metastatic breast cancer
- Oral, Head and Neck Cancer Connection
- Pancreatic/GI Cancer Support Group
- Rochester Bone Marrow Transplant Support Group
- Young Adults Survivor Connection Support Group

Collaboration with Community Agencies – American Cancer Society, Gilda’s Club of Rochester, Breast Cancer Coalition of Rochester, and Volunteer Legal Service Project – brings diverse offerings to our patients and prevents duplication of services. Ongoing activities in collaboration with community agencies include:

- American Cancer Society – “I Can Cope”
- Educational Classes for Patients and Families
- Gilda’s Club of Rochester – Leukemia and Lymphoma Networking Group
- GYN Cancer Advocacy and Education Group
- Multiple Myeloma Support Group
- Lung Cancer Support Group.

In addition, educational sessions are ongoing and include topics ranging from “Understanding New Mammography Guidelines” to “Financial Bootcamp for Patients, Survivors, and Caregivers”.

V Professional Education

In addition to the multidisciplinary conferences, there are numerous CME bearing conferences for medical professionals in the Cancer Center as well as the URMC community. Cancer Center Grand Rounds occur every Friday at noon and usually feature a noted external speaker/expert in a particular field.

Cancer Education Programs for Faculty, Staff

The Wilmot Cancer Center and the University of Rochester Medical Center offer a rigorous schedule of continuing education programs for faculty and staff to enhance patient care and research efforts.

The Cancer Center’s 2010 Grand Rounds brought experts from across the country to discuss advances in care and new challenges for study. Among the lectures:

- “Challenging Cases in Metastatic Breast Cancer” by Andrew Seidman, MD of Weill Medical College.
- “The Imexon Story” by Robert T. Dorr, PhD, RPH, of Arizona Cancer Center.
- “Ecotherapy for Prostate Cancer: The Role of Tumor Associated Macrophages” by Kenneth Pienta, MD, of University of Michigan.
- “Centuximab Based Immunotherapy of Head and Neck Cancer” by Robert Ferris, MD, PhD, of Pittsburgh Cancer Institute.
- “New Visions of Brain Cancer Through a Stem Cell Prism” by Jeremy N. Rich, M.D of Lerner Research Institute in Cleveland.

In addition, Wilmot Cancer Center experts provide similar lectures for other cancer centers across the country.

Nursing Grand Rounds are held monthly and consist of clinically relevant topics, usually presented by an Advanced Practice Nurse. In addition, the Oncology Nursing Society chemotherapy/biotherapy course is offered four times a year for nursing staff at Strong Memorial Hospital and its affiliates (as well as being open to the public) to provide the educational preparation necessary for nurses administering anti-neoplastic agents.

Once a year, the ONS certification review course is offered to nursing staff who are interested in preparing for OCN certification.

VI Community Outreach

Wilmot Cancer Center doctors, nurses and scientists are involved in a variety of community outreach activities. We have close affiliations with not-for-profit



agencies that support people with cancer and their families.

Wilmot experts lead support groups and special programs to address new therapies available today and the future of cancer research, clinical trial participation, coping with disease, and tips for caregivers. Gilda's Club, Breast Cancer Coalition of Rochester and the Leukemia and Lymphoma Society of Western New York regularly invite Wilmot specialists to lead support group programs and answer questions from members.

Community Outreach and Educational Offerings for the Community in 2010 included:

- "High grade bladder cancer: What are my options?" – In conjunction with the Bladder Cancer Support Group
- "Surgical advances for brain tumors" – In conjunction with the Adult Brain Tumor Network
- "Lung cancer diagnosis treatment" – In conjunction with the Gilda's Club.
- "Acupuncture: reducing stress, pain, and fatigue" – In conjunction with the Young Adult Survivor Connections
- "History of breast cancer" – In conjunction with the Breast Cancer Coalition of Rochester
- "Ask the Expert - Colorectal Cancer" – In conjunction with the Gilda's Club.
- "Advanced Insights - Update on vitamin D and bone/ breast health" – In conjunction with the Advanced Insights
- "Nutrition and Cancer Care" – Sponsored by the Integrative Oncology Lecture Series.

- "From Biopsy to Robotics" – In conjunction with the Bladder Cancer Support Group
- "Palliative Care - How to Enhance your Life" – In conjunction with the Advanced Insights
- "Acupuncture for managing side effects" – In conjunction with the OHN Cancer Connection
- "Understanding new mammography guidelines" – In conjunction with the Breast Cancer Coalition of Rochester
- "Nutrition and Cancer Care" – In conjunction with Gilda's Club.
- "Spirituality and Cancer Care" – In conjunction with the Integrative Oncology Lecture Series.
- "Support Groups Can Help Men with Prostate Cancer" – In conjunction with American Cancer Society.
- "What is the Investigational Research Board?" – In conjunction with the OHN Cancer Connection
- "Prostate Cancer - Increased Incidence of Low Risk Disease and Role of Active Surveillance" – In conjunction with the American Cancer Society.
- "Bladder Cancer Research - Clinical Trials" – In conjunction with the Bladder Cancer Support Group
- "Oncology Massage - Reducing symptoms and side effects of cancer and its treatments" – In conjunction with the Human Touch Initiative.
- "Genetics of Breast Cancer, BRCA I & II" – In conjunction with the Breast Cancer Coalition of Rochester.

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Prevention and Early Detection Programs and Cancer Survivorship Celebrations included:

- Annual Men's Health Day – An event focused on screening and men's health issues, including prostate cancer.
- Community Cancer Collaborative Survivors Celebration – A victory celebration for survivors and families.
- Breast Health Day – An event focused on risk reduction, screening and early detection.
- Bone Marrow Transplant Program Annual Survivors Picnic – A program for survivors and families.
- 25th Annual Skin Cancer Screening Program – Sponsored by the Department of Dermatology.
- Tasting event to celebrate OHN cancer week – An event sponsored by the H&N Connection.
- Survivor's Celebration – Sponsored by the Adult Brain Tumor Network.

VII Faculty Recruitment Highlights for 2010

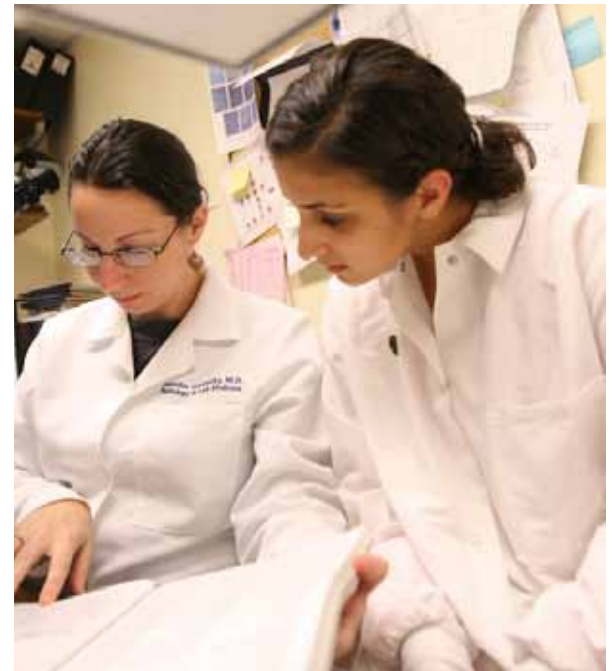
Paul Barr, M.D., assistant professor, joined the multidisciplinary lymphoma team from Case Western University where he was director of the lymphoma program. In 2007, Barr trained under Richard I. Fisher, M.D., director of the Wilmot Cancer Center and an international expert in lymphoma. Barr will also join the collaborative team of scientists working on the

lymphoma Specialized Program of Research Excellence and will study new therapies for T-cell lymphomas. He is a graduate of Miami University in Ohio and Northeastern Ohio Universities College of Medicine and completed residency and fellowship training at Case Western Reserve University. He was selected to participate in the American society of Hematology clinical Research Training Institute and has published several papers on lymphoma.

Kristen O'Dwyer, M.D., joined the multidisciplinary leukemia team and the laboratory of Dr. Craig Jordan. She most recently completed fellowship training at Memorial Sloan Kettering Cancer Center and before that, residencies at New York Presbyterian Hospital/Weill Cornell Medical College and the National Cancer Institute. O'Dwyer is a graduate of Northwestern University and University of Iowa before earning her medical degree from University of Wisconsin School of Medicine and Public Health. She received the American society of Clinical Oncology Cancer Foundation Young Investigator Award and has published several research studies in major journals.

Christina Wiedl, D.O., joined the benign hematology program and cares for people with blood and coagulation disorders. She is an instructor and a Wilmot Cancer Research Fellow studying therapies to target refractory and relapsed pediatric leukemias in the lab of Craig Jordan, Ph.D. In addition, she has established a clinic for patients with sickle cell anemia

and thalassemia, which serves a very important niche in our care of patients with benign hematological disorders. A graduate of Allegheny College, she earned a doctorate at the Philadelphia college of Osteopathic Medicine. She completed a residency in pediatrics at A.I. Dupont Hospital for Children at Thomas Jefferson University Hospital before joining the Medical Center's Gollisano Children's Hospital in June 2007.



VIII 2010 Cancer Program Improvement Highlights:

- Improved the number of patients in which National Treatment Guidelines and staging were discussed.
- Received the Outstanding Achievement Award by the American College of Surgeons.
- The Comprehensive Breast Care Center was named a Center of Excellence for Breast Imaging by the American College of Radiology.
- Continued to increase and enhance the number and quality of support services and educational programs for patients and families.
- Initiated the process to achieve Quality Oncology Practice Initiative (QOPI) certification. The QOPI Certification designation demonstrates a commitment to quality.
- Achieved an Overall Patient Satisfaction Score (overall mean trend) of 90% in the Outpatient Oncology area for the first 3 quarters of 2010.
- Initiated the process to achieve certification by the National Quality Metrics for Breast Centers Program.
- Initiated the process to achieve accreditation by the National Accreditation Program for Breast Centers.

The Wilmot Cancer Committee has established the following goals for 2011:

Clinical Services/Conferences

- Ensure the highest standard of patient evaluation and care through multi-disciplinary case review and management.
- Continue to monitor attendance at conferences; work with Conference coordinators to ensure that attendance is accurate.
- Ensure that staging and use of National guidelines is a component of discussion at Cancer Conferences.
- Achieve accreditation by the National Accreditation Program for Breast Centers.

VIX 2011 Cancer Committee Program Goals:

Quality Improvement

- Utilizing nationally accepted standards for measuring quality, as well as data from the registry and NCDB, evaluate program performance in:
 - Head and Neck Program – June, 2011
 - Neuro-Oncology Program – December, 2011
- Continue with process towards achieving accreditation by the Quality Oncology Practice Initiative (QOPI). In accordance with that process, focus on improvements in the following areas:
 - Smoking Cessation Documentation
 - Development of a Chemotherapy Consent Protocol
 - Achieve accreditation by the National Quality Metrics for Breast Centers.

Program/Registry

- Achieve >90% performance rates for CP3R information submitted via the NCDB
- Ensure participation in continuing education programs for all registrars.

Community Outreach

- Continue collaboration with community agencies and partners to offer support services in and outside of the Cancer Center.
- Continue work with Cancer Center Patient Family Advisory Council on the Patient Education initiative.
- Work with the American Lung Association in their efforts to enhance community outreach efforts for our Thoracic Oncology Patients.

Scientist' Team Spirit Brings Discoveries to Patients

Two years ago the James P. Wilmot Cancer Center got its biggest shot in the arm in years, in the form of an \$11.5 million SPORE grant.

It was an exciting time at the Wilmot Cancer Center. A new building had just opened its doors to patients, and then the National Cancer Institute added Wilmot to its ambitious SPORE program, which is reserved for top-tier researchers and medical centers.

The award came with very high expectations about the pace of research and Wilmot's ability to take advantage of collaborations with University of Arizona Cancer Center and the Massey Cancer Center at Virginia Commonwealth University to spawn new discoveries. So far, progress has been smooth and steady.

Already, the Wilmot SPORE team has established two new experimental drug trials, began building a blood and tissue database for research, obtained additional funding to expand a couple of particularly promising studies, initiated a new program in lymphoma epidemiology, and recruited two scientists to join the SPORE team.

"We're very excited about the progress we've made and how it's changing patient care already," says Richard I. Fisher, M.D., director of the Wilmot Cancer Center and lead scientist on the multi-faceted SPORE program. "We've also built a team with a great collaborative spirit across several institutions and that's so very important to this program."

Offering a Second Chance

The fast-track project has given a Utica-area man a second chance for survival by participating in one of the

clinical trials of an agent that may inhibit development of a key protein that is found in many cancer cells. Bible Baptist Church minister James "Douglas" Hanback travels to Rochester for treatment for T-cell lymphoma, a rare and aggressive disease that is resistant to standard therapies. When diagnosed three years ago, his oncologist Atul V. Butala, M.D., recommended he take advantage of the expertise at the Wilmot Cancer Center, which has one of the largest teams of lymphoma specialists in the Northeast.

Jonathan Friedberg, M.D., chief of Hematology/Oncology, suggested a clinical trial that brought his disease into remission for 18 months. When the lymphoma returned last summer, Hanback was offered another investigational therapy generated by the SPORE team.



What is Lymphoma?

Lymphomas are a group of cancers that originate in the lymphatic system, which helps the body fight infection and disease.

This year, about 74,000 Americans will be diagnosed with non-Hodgkin's lymphoma and the less common Hodgkin's disease.

The National Cancer Institute is keenly interested in learning more about the causes and treatments of lymphomas because the incidence has grown by nearly 80 percent in the past 30 years. In New York State, Monroe County has one of the highest rates of lymphoma incidence.

"It was either the clinical trial or try some other stuff that hasn't shown great benefit," says Hanback, 50. "It was an easy decision. I looked at my wife and our four kids and well, there's the motivation." Hanback had a "remarkable response" to the drug, which is less toxic than other chemotherapy agents, and it brought the disease into remission. Since then, he received a potentially curative bone marrow transplant in May. Recovery has been swift and he's back to work supporting parishioners.



"It's exciting to see a patient have a response to a new drug and the response for someone with T-cell lymphoma is very promising," says Wilmot oncologist Steven Bernstein, M.D. He is collaborating with Arizona Cancer Center oncologist Daruka Mahadevan, M.D., Ph.D., an expert in development of new therapeutic agents, on the Phase 2 clinical trial of MLN-8237 and other projects. "We all have different areas of expertise and we apply our skills in not just one project, but several endeavors," Bernstein says. He is co-director of Wilmot's lymphoma biology program.

The drug is an aurora kinase inhibitor and scientists find high levels of this protein in a variety of cancer cells, though they don't know why. Quelling the protein is one tactic for controlling the disease, and in preclinical studies, MLN-8237 has been effective.

Given the early successes that doctors are seeing using this new therapy, the team will expand the clinical trial to patients with other forms of lymphoma. Oncologist Paul Barr, M.D., who joined Wilmot earlier this year, will assess the benefit of MLN-8237 combined with standard therapies for T-cell lymphomas.

Research Innovations

The SPORE grant supports collaborative programs that will help bring laboratory discoveries to the clinical setting quickly and to target lymphoma cells and personalize treatments.

Bernstein and Arizona's Thomas P. Miller, M.D., and Margaret Briehl, Ph.D., are working to manipulate the activity of "free radicals" at the cellular level to kill tumors. Cancer cells are more sensitive to changes in the levels of free radicals and by modulating the levels, the

body's immune system may help fight the deadly cells. Scientists are using imexon, an investigational drug, to regulate the machinations of the cellular debris. Early, under-the-microscope analyses and results are positive, which means in the coming months, they will likely launch a clinical trial to study dosing and effectiveness in select groups of patients.

The potential that this study holds, and Bernstein's other immune response research, caught the attention of the Leukemia and Lymphoma Society. The group recently awarded Bernstein a \$600,000 grant to further his work, which brings his research funding to more than \$3 million.

"This type of grant funding is one of the benefits of receiving a SPORE grant because it shows that we're doing novel research and we receive additional funding for parallel studies as a result," says Friedberg. "It helps us build a stronger team and to have greater impact in the laboratory and with patients."

Among the clinical research objectives, SPORE funding is also designed to strengthen the research infrastructure for additional growth. Hematopathologist W. Richard Burack, M.D., Ph.D., is leading the creation of a tissue bank of live lymphoma cells from consenting patients.

In this age of personalized medicine and targeted therapies, the tissue bank is a valuable tool to gain understanding of lymphomas many variations at the cellular level. This state-of-the-art database is one of only a handful in the country for lymphoma.

"When you look at the very complex nature and numerous scenarios that come with lymphomas, the scientist can study these samples and get better



understanding of how each tumor is unique," says Burack, who leads a group essential to the diagnosis and staging of lymphoma, leukemia or other blood disorders. For scientists like Bernstein, who is assessing immune response to disease, access to these rare samples "allows us to look at the mechanisms of novel agents on lymphoma cells." He will rely on them as he pursues the Leukemia and Lymphoma Society-funded research into how genetic abnormalities in tumors affect treatment outcomes.

Supporting Young Scientists

Among the many advantages of bringing scientists from multiple institutions together for a project as massive as the lymphoma SPORE are the opportunities for young scientists. Leaders bring talented researchers who are building their research portfolios into the fold, mentoring them and offering seed funding for pilot projects.

"It's a tremendous opportunity for some of our junior faculty members to join this team and learn not only from scientists throughout our Medical Center, but our partners at Arizona and Virginia too," says Friedberg. Jennifer Kelly, M.P.H., Ph.D., a post-doctoral epidemiology researcher, received a SPORE Career Development Grant to continue her research into the role of vitamin D and lymphoma and create a lymphoma epidemiology program.

Her doctoral research centered on whether vitamin D deficiency contributed to the development of lymphoma. "We did not find an association between vitamin D and lymphoma risk overall. However, we were unable to look within specific subtypes of lymphoma with this small preliminary study," Kelly says.

To continue this research, she is working with scientists at Mayo Clinic in Rochester, Minn., which is leading a separate lymphoma SPORE project in partnership with



University of Iowa's Holden Comprehensive Cancer Center. Mayo Clinic has a large epidemiologic database of information on patients with lymphoma and she is tapping into their data on risk factors, treatments, and survival to further her project.

Her grant funding will support efforts to build a parallel database here at URMIC to expand opportunities for analyses and greater collaboration.

"Working in parallel with the SPORE tissue bank, we want to also gather epidemiologic information, such as exposure to potential risk factors and demographic characteristics, and follow lymphoma patients during and after treatment to evaluate factors that might be associated with treatment responses, quality of life and survival," says Kelly, who studied epidemiology with Susan G. Fisher, Ph.D., chair of Community and Preventive Medicine. Fisher is leading the Career Development Program within the SPORE initiative with Briehl from Arizona.

"Jennifer Kelly is a great example of how the Career Development Program is effective," Friedberg says. "She earned her degree in epidemiology and was looking at her options to pursue and we were able to provide her with funding and mentorship that made joining our team to study lymphoma and expand our program so very attractive for her."

Scientists have three more years to execute the NCI-funded research and hope to continue the work with a grant renewal.

"The beauty of the SPORE grant is that our patients reap the many rewards of the studies and the additional research projects that blossom from it," Fisher says. "It takes a lot of hard work and the successes we're seeing are very satisfying for all of us."

What is the SPORE?

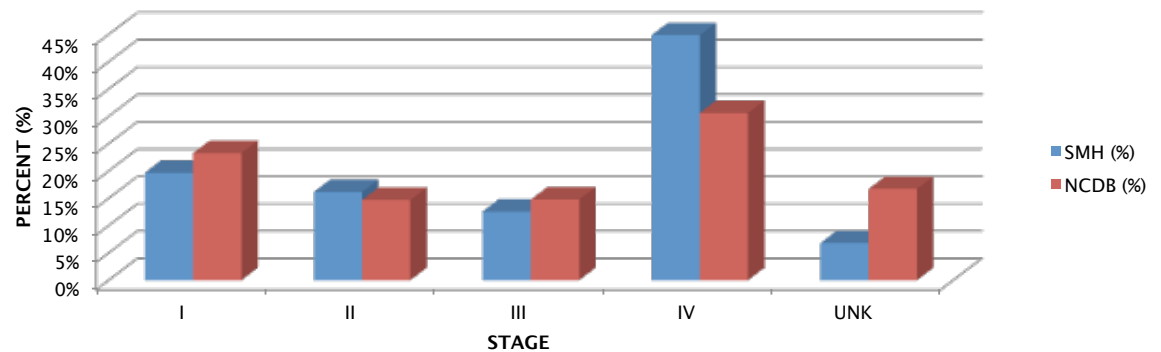
The highly competitive National Cancer Institute-funded Specialized Programs of Research Excellence (SPORE) fuels translational research projects designed to quickly move research from the lab to patients.

The NCI funds SPORE projects at the top academic institutions across the country focusing on brain, breast, gastrointestinal, genitourinary, gynecologic, head and neck, ovarian, pancreatic, prostate, and skin cancers, as well as leukemia, lymphoma and myeloma.

"Holding a SPORE grant credentials the James P. Wilmot Cancer Center as a national leader for lymphoma research and care," says Richard I. Fisher, M.D., director of the Wilmot Cancer Center. "It's a 'seal of approval' from the National Cancer Institute for the research program that we've built."

This five-year grant is the first for the Wilmot Cancer Center, the only upstate institution to earn prestigious SPORE funding, which is awarded to institutions conducting collaborative, novel cancer research programs. There are only four other lymphoma SPORE grants in the country, at Johns Hopkins University, University of Iowa, City of Hope and Baylor College of Medicine.

**Stage of NHL – SMH vs. NCDB
Diagnosed in 2000 – 2008**



Lymphoma Cancer Data

CANCER REGISTRY REPORT

The Strong Memorial Hospital Cancer Registry is a data system designed for the collection, management and analysis of data on people diagnosed with malignant disease. Four full-time Certified Cancer Registrars maintain the daily functions of the registry, and ensure data accuracy with continuous quality improvement reviews by Cancer Committee physicians. The registry provides the Cancer Committee with information from which clinical application and analysis of patient outcomes can be determined.

The Strong Memorial Hospital Cancer Registry contains information dating back to 1990 and a database of more than 54,000 cases.

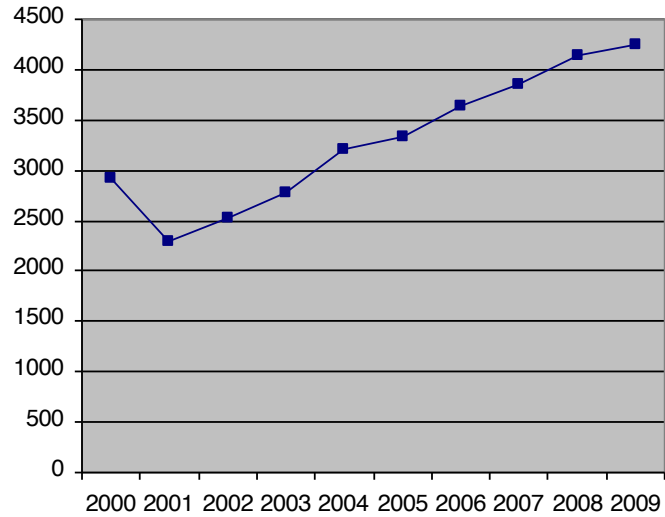
In 2009, 4,234 new cases of cancer were accessioned in the cancer registry. Of these cases, 2,396 were male and 1,838 were female. Fifty-nine percent of the analytical cases were diagnosed at Strong Memorial Hospital and forty-one percent were referred from other healthcare facilities. Geographically, 50 percent of the patients were from Monroe County, 8 percent from Ontario County, 5 percent from Wayne and 4 percent from Livingston Counties, and the remaining 33 percent of patients lived in other areas of New York counties and outside the state.

The Cancer Registry received a Certificate of Recognition from the New York State Cancer Registry for completeness and timeliness of cancer reporting for the year 2009.

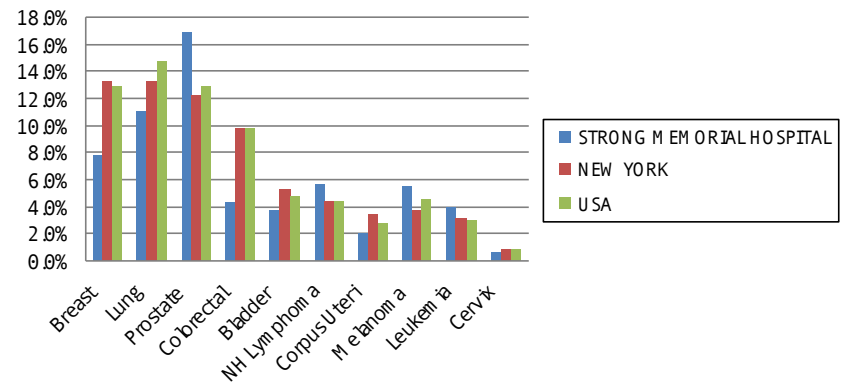
Cancer Registrars are board members for the New York Cancer Registrars Association, and keep current by attending educational programs sponsored by the North American Association of Central Cancer Registries, the National Cancer Registrars Association as well as the New York Cancer Registrars Association.



James P. Wilmot Cancer Center / Strong Memorial Hospital Annual Cases Abstracted 2000-2009



Strong Memorial Hospital 2009 Estimated New Cancer Cases for Selected Sites



Source: The American Cancer Society Cancer Facts & Figures 2009

Glossary of Terms:

Analytic: Cancer diagnosed and/or received first course of treatment at Strong Memorial Hospital

First Course of Treatment: Initial cancer-directed treatment or series of treatments planned and usually initiated within four months of diagnosis or as determined by the physician.

James P. Wilmot Cancer Center / Strong Memorial Hospital 2009 Analytic Cases - Cancer Referrals

| | | | |
|-------------|------|------|--------|
| Monroe | 50% | 2117 | 50.0% |
| Ontario | 8% | 330 | 7.8% |
| Wayne | 5% | 201 | 4.7% |
| Livingston | 4% | 180 | 4.3% |
| Genesee | 3% | 149 | 3.5% |
| Steuben | 3% | 144 | 3.4% |
| Oneida | 2% | 84 | 2.0% |
| Yates | 2% | 71 | 1.7% |
| Chemung | 2% | 71 | 1.7% |
| Seneca | 2% | 69 | 1.6% |
| Orleans | 2% | 67 | 1.6% |
| Erie | 1% | 66 | 1.6% |
| Other | 16% | 685 | 16.2% |
| Grand Total | 100% | 4234 | 100.1% |

| | | | | | | | | | | | |
|-------------|----|--------|-------------|----|----------------|-------------|----------|----|------------|----|-----|
| Allegany | 66 | Potter | PA | 7 | County unknown | 1 | Horry | SC | 1 | | |
| Broome | 62 | 999 - | | 6 | 998 | 1 | Fentress | TN | 1 | | |
| Wyoming | NY | 59 | Saratoga | NY | 5 | Polk | TX | 1 | Erie | PA | 1 |
| Onondaga | NY | 54 | McKean | PA | 5 | Wayne | NC | 1 | Hamilton | NY | 1 |
| Tompkins | NY | 53 | Lewis | NY | 5 | Warren | OH | 1 | Fulton | NY | 1 |
| Cayuga | NY | 51 | Schenectady | NY | 4 | Shelby | TN | 1 | Essex | NY | 1 |
| Tioga | NY | 30 | Otsego | NY | 4 | Gwinnett | GA | 1 | Clermont | OH | 1 |
| Bradford | PA | 22 | Nassau | NY | 4 | Volusia | FL | 1 | Monmouth | NJ | 1 |
| Schulyler | NY | 21 | Delaware | NY | 4 | Moore | NC | 1 | Nye | NV | 1 |
| Chautauqua | NY | 20 | Palm Beach | FL | 3 | Westchester | NY | 1 | Buncombe | NC | 1 |
| Cattaraugus | NY | 18 | Clinton | NY | 3 | Sumter | FL | 1 | Clark | AR | 1 |
| St Lawrence | NY | 17 | Broward | FL | 3 | Oklahoma | OK | 1 | Washington | RI | 1 |
| Jefferson | NY | 17 | Warren | PA | 2 | St Johns | FL | 1 | Bedford | PA | 1 |
| Herkimer | NY | 16 | Susquehanna | PA | 2 | Polk | FL | 1 | Chittenden | VT | 1 |
| Chenango | NY | 15 | Rensselaer | NY | 2 | Henry | KY | 1 | Clark | NV | 1 |
| Oswego | NY | 14 | Montgomery | NY | 2 | Iredell | NC | 1 | Bergen | NJ | 1 |
| Tioga | PA | 13 | Franklin | NY | 2 | De Kalb | GA | 1 | Fairfield | CT | 1 |
| Cortland | NY | 11 | Plymouth | MA | 2 | Rockland | NY | 1 | TOTAL | | 685 |
| Niagara | NY | 10 | Burlington | NJ | 2 | Martin | FL | 1 | | | |
| Madison | NY | 10 | Albany | NY | 2 | Lee | FL | 1 | | | |

Cancer Committee Members 2010

Brendan Boyce, M.D., *Pathology*
Ralph Brasacchio, M.D., *Radiation Oncology*
Marc Brown, M.D., *Dermatology*
Sandra Bucukovski, *Surgical Oncology/Conference Coordinator*
Veronica Burke, RN, *Oncology Nursing*
Carla Caves, *Quality Assurance – Surgery*
Vikram Dogra, M.D., *Diagnostic Radiology*
Richard I. Fisher, MD, *Director, Cancer Center*
The Rev. Robin Y. Franklin, *Chaplaincy Services*
Carol French, *Cancer Center clinical Trials Office*
Jennifer Galdys, *Oncology CNS*
Dragan Golijanin, M.D., *Urology*
David G. Hicks, M.D., *Pathology*
Carolyn Jones, M.D., *Thoracic Oncology*
Jean Joseph, M.D., *Urology*
Randeep Kashyap, M.D., *Surgery*
Alok Khorana, M.D., *Medical Oncology*
David Korones, M.D., *Pediatric Neuro-oncology*
David Krusch, M.D., *Surgical Oncology*

Joanna Lipp, RD, *Food & Nutrition Services*
John Loughner, Pharm. D., *Cancer Center Pharmacy*
Brian Martin, *Cancer Center Administration*
John Monson, M.D., *Colon Rectal Surgery*
Patti Murray, RN, *Cancer Center Administration*
Heather Odden, *Physical Therapy/Rehabilitative Services*
Laurie O'Donoghue, B.S., C.C.R.P., *Surgical Oncology*
Jeffrey Peters, M.D., *Chair, Surgery*
Timothy Quill, M.D., *Palliative Care*
Margie Richardson, C.T.R., *Cancer Registry*
Randy Rosier, M.D., *Orthopedic Oncology*
Kate Ryan, *Oncology Social Work*
Rabih Salloum, M.D., *Surgery*
Ann Savastano, *American Cancer Society*
Luke Schoeniger, M.D., *Surgical Oncology, Cancer Physician Liaison*
Kristin Skinner, M.D., *Surgical Oncology, Cancer Committee Chair*
Donna Sweeney, *Public Member, Community Served*
Eugene Toy, M.D., *Gynecologic Oncology*

Paul Van der Sloot, M.D., *Otolaryngology*
Kevin Walter, M.D., *Neurosurgery*

Strong Memorial Hospital 2009 Primary Site Distribution

Dominant AJCC Stage Group

| Primary Site | Total | Male | Female | Analytic | NonAnalytic | 0 | I | II | III | IV | None | Unknown |
|-------------------|-------|------|--------|----------|-------------|----|-----|-----|-----|-----|------|---------|
| Lip | 1 | 1 | | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 |
| Tongue | 24 | 20 | 4 | 21 | 3 | 1 | 2 | 1 | 5 | 14 | 0 | 1 |
| Mouth | 15 | 8 | 7 | 11 | 4 | 1 | 2 | 4 | 1 | 5 | 0 | 2 |
| Pharynx | 27 | 19 | 8 | 20 | 7 | 0 | 3 | 1 | 5 | 17 | 0 | 1 |
| Esophagus | 74 | 60 | 14 | 64 | 10 | 1 | 10 | 13 | 15 | 21 | 0 | 14 |
| Stomach | 54 | 38 | 16 | 52 | 2 | 0 | 14 | 6 | 10 | 14 | 0 | 10 |
| Small Intestine | 5 | 4 | 1 | 5 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 2 |
| Large Intestine | 126 | 69 | 57 | 93 | 33 | 3 | 25 | 18 | 23 | 31 | 2 | 24 |
| Rectum | 58 | 37 | 21 | 38 | 20 | 8 | 9 | 7 | 13 | 9 | 2 | 10 |
| Liver/Biliary | 92 | 64 | 28 | 79 | 13 | 0 | 19 | 15 | 22 | 11 | 0 | 25 |
| Pancreas | 121 | 59 | 62 | 106 | 15 | 0 | 4 | 28 | 9 | 48 | 0 | 32 |
| Other Digestive | 16 | 7 | 9 | 12 | 4 | 0 | 3 | 1 | 3 | 2 | 1 | 6 |
| Larynx | 23 | 22 | 1 | 20 | 3 | 4 | 5 | 1 | 7 | 4 | 0 | 2 |
| Lung | 472 | 253 | 219 | 411 | 61 | 0 | 140 | 23 | 110 | 161 | 1 | 37 |
| Bone | 13 | 7 | 6 | 11 | 2 | 0 | 2 | 3 | 0 | 2 | 0 | 6 |
| Connective Tissue | 26 | 12 | 14 | 23 | 3 | 0 | 4 | 1 | 8 | 3 | 0 | 10 |
| Skin/Melanoma | 232 | 126 | 106 | 177 | 55 | 70 | 90 | 19 | 6 | 7 | 0 | 40 |
| Breast | 329 | 6 | 323 | 215 | 114 | 25 | 136 | 86 | 38 | 8 | 0 | 36 |
| Cervix Uteri | 27 | 0 | 27 | 8 | 19 | 1 | 5 | 1 | 5 | 6 | 0 | 9 |
| Corpus Uteri | 83 | 0 | 83 | 33 | 50 | 0 | 40 | 8 | 11 | 2 | 0 | 22 |
| Ovary | 24 | 0 | 24 | 12 | 12 | 0 | 9 | 1 | 3 | 3 | 0 | 8 |
| Other Female | 30 | 0 | 30 | 13 | 17 | 6 | 3 | 5 | 1 | 4 | 3 | 8 |
| Prostate | 714 | 714 | 0 | 606 | 108 | 0 | 4 | 414 | 94 | 54 | 0 | 148 |
| Testis | 20 | 20 | 0 | 17 | 3 | 0 | 15 | 2 | 3 | 0 | 0 | 0 |
| Other Male | 13 | 13 | 0 | 12 | 1 | 5 | 1 | 1 | 1 | 1 | 3 | 1 |

Strong Memorial Hospital 2009 Primary Site Distribution

Dominant AJCC Stage Group

| Primary Site | Total | Male | Female | Analytic | NonAnalytic | 0 | I | II | III | IV | None | Unknown |
|------------------------------|-------------|-------------|-------------|-------------|-------------|------------|------------|------------|------------|------------|------------|------------|
| Bladder | 158 | 127 | 31 | 118 | 40 | 72 | 32 | 10 | 10 | 15 | 0 | 19 |
| Kidney/Other | 133 | 78 | 55 | 114 | 19 | 5 | 66 | 11 | 11 | 10 | 0 | 30 |
| Eye | 2 | 0 | 2 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 |
| Brain/CNS | 222 | 95 | 127 | 183 | 39 | 0 | 0 | 0 | 0 | 0 | 222 | 0 |
| Thyroid | 115 | 36 | 79 | 108 | 7 | 0 | 60 | 6 | 12 | 8 | 0 | 29 |
| Endocrine/Other | 9 | 1 | 8 | 7 | 2 | 0 | 0 | 0 | 0 | 0 | 9 | 0 |
| Lymphocytic Leukemia | 82 | 54 | 28 | 40 | 42 | 0 | 0 | 0 | 0 | 0 | 82 | 0 |
| Myeloid & Monocytic Leukemia | 72 | 35 | 37 | 45 | 27 | 0 | 0 | 0 | 0 | 0 | 72 | 0 |
| Other Leukemia | 16 | 11 | 5 | 5 | 11 | 0 | 0 | 0 | 0 | 0 | 16 | 0 |
| Hodgkin Lymphoma | 28 | 15 | 13 | 16 | 12 | 0 | 2 | 13 | 4 | 4 | 0 | 5 |
| Non-Hodgkin Lymphoma | 236 | 135 | 101 | 139 | 97 | 0 | 35 | 23 | 27 | 91 | 0 | 60 |
| Myeloma | 55 | 34 | 21 | 38 | 17 | 0 | 0 | 0 | 0 | 0 | 55 | 0 |
| All Other | 487 | 216 | 271 | 339 | 148 | 109 | 31 | 16 | 14 | 14 | 282 | 21 |
| Grand Total | 4234 | 2396 | 1838 | 3213 | 1021 | 313 | 772 | 738 | 472 | 569 | 751 | 619 |



Strong Memorial Hospital

Strong Memorial Hospital is the Rochester and Finger Lakes region's largest hospital with 739 beds and is a component of the highly respected University of Rochester Medical Center. Clinical faculty members provide a broad range of services, many recognized as best in the nation. As an academic hospital, our patients have access to the latest treatments before they are widely available. In addition to its notable programs of clinical excellence, Strong Memorial Hospital has twice earned designation as an American Nurses Credentialing Center Magnet Hospital of

Nursing Excellence. SMH is also approved by the Joint Commission on Accreditation of Health Care Organizations.

Multidisciplinary cancer care is provided by the James P. Wilmot Cancer Center, which leads our region in inpatient and outpatient care, clinical and laboratory research, and education programs. The center serves patients throughout the region's 11-counties and those who travel from across the United States and beyond, for the highly specialized and unique treatments available here. For example, our

lymphoma team is one of the most highly regarded in the Northeast, our Comprehensive Breast Care Center is the first in upstate New York, and our radiation oncologists are offering innovative therapy to those once considered incurable.

The Wilmot Cancer Center collaborates with Highland Hospital for radiation and medical oncology services. Our physicians also work closely with nearby Unity Health System and F.F. Thompson Hospital to provide radiation oncology services. In addition, the center works with other practices and hospitals in the region as part of the James P. Wilmot Community Oncology Network to expand access to the newest therapies through clinical trials.

The Wilmot Cancer Center has received accreditations from prestigious organizations for its quality care. The program is a designated Center of Excellence by Aetna, United Resource Networks, Optum Health, MVP, Strategic Health Development Corporation and a Blue Distinction Center for Transplant. It is a Blue Distinction Center for Rare Cancers and holds accreditation from the American College of Radiology.

The Samuel E. Durand Blood and Marrow Transplant Program, based in Strong Memorial Hospital, is certified as a Center of Excellence by Foundation for the Accreditation of Cellular Therapy and accredited by the National Marrow Donor Program.

WILMOT
CANCER CENTER



UNIVERSITY of
ROCHESTER
MEDICAL CENTER

MEDICINE of THE HIGHEST ORDER