It was the spring of 1991, and at the age of 48, a successful biomedical engineer was diagnosed with glioblastoma multiforme, the most aggressive type of brain cancer, after having a seizure in his doctor’s office. Surgery was not an option because of the location of the tumor, and symptoms caused by the cancer ruled out radiation therapy. At the time, the odds were grim, as the five-year survival was less than 5 percent. He died two weeks later.

In the 25 years since, there have been some significant advancements in the treatment of this deadly cancer, including the introduction of the chemotherapy temozolamide with concurrent radiotherapy. Nevertheless, the median survival is still only 15 months. Glioblastoma multiforme and other types of the deadliest cancers have not seen robust improvements in survival despite revolutionary advancements in personalized medicine and impressive declines in overall cancer mortality in recent years.

No one understands the limited progress made with some of these cancers better than Vice President Joe Biden, who lost his oldest son, Beau, to brain cancer at the age of 46 last summer. Therefore, it should come as no surprise that President Barack Obama charged Biden with leading the Administration’s National Cancer Moonshot initiative, first announced in Obama’s State of the Union address in January.

This moonshot is ambitious. Its major goals are to accelerate cancer research efforts aimed at developing new ways to prevent, diagnose and treat cancer, reducing barriers to enhanced access, and facilitating collaborations among all stakeholders – researchers, physicians, patients, advocates, non-profit organizations, and industry partners. Importantly, the initiative proposes to invest $1 billion to accomplish these objectives, including focused efforts in cancer prevention, early detection, immunotherapy and combination therapy, tumor and microenvironment genomic profiling data that will be accessible to the entire cancer research community. The moonshot initiative provides hope that future generations will view any cancer diagnosis as something they live with, rather than die from. We thank the Administration for making this a national priority, and look forward to Vice President Biden blazing the trail with us.

Michelle M. Le Beau, PhD
Director, The University of Chicago Medicine Comprehensive Cancer Center; Arthur and Marian Edelstein Professor of Medicine

FROM THE DIRECTOR
In his 2015 State of the Union address, President Obama asked Vice President Biden to lead a “moonshot” effort to cure cancer. At the University of Chicago Medicine Comprehensive Cancer Center, we have been making strides toward this lofty goal each year. From innovative clinical trials to the latest immunotherapies, our researchers and clinicians are at the forefront of discovery.

Nevertheless, the median survival is still only 15 months. Glioblastoma multiforme and other types of the deadliest cancers have not seen robust improvements in survival despite revolutionary advancements in personalized medicine and impressive declines in overall cancer mortality.

The moonshot initiative. The Comprehensive Cancer Center is proud to be a part of such a historic effort to fight cancer.

Michelle M. Le Beau, PhD
Professor of Medicine
Director, The University of Chicago Medicine Comprehensive Cancer Center; Arthur and Marian Edelstein Professor of Medicine

How is the Comprehensive Cancer Center Already Tackling the Cancer Moonshot Initiative?

Prevention and Cancer Vaccine Development
Early Cancer Detection
Cancer Immunotherapy and Combination Therapy
Genomic Analysis of Tumor and Surrounding Cells
Enhanced Data Sharing
Pediatric Cancer
One-of-a-kind, community-based cohort study to understand cancer causes, and to develop interventions
Leading the way in innovative imaging techniques for early detection of breast and prostate cancer
Researching mechanisms of immunotherapy resistance and predicting patient drug response
Studying tumor heterogeneity and targeting mechanisms for therapy through innovative clinical trials
Home to first Genomic Data Commons (GDC) to host all of the National Cancer Institute’s genomic data
Identifying factors that increase the risk of second malignancies in childhood cancer survivors

Spring 2016 | cancer.uchicago.edu

An Historic Effort to Fight Cancer

Pathways to DISCOVERY
At the Forefront of Cancer Care and Discovery

The moonshot initiative.

Michelle M. Le Beau, PhD
Professor of Medicine
Director, The University of Chicago Medicine Comprehensive Cancer Center; Arthur and Marian Edelstein Professor of Medicine

It is an exciting time in cancer research, and we thank you for joining us on this journey. Regards,

Michelle M. Le Beau, PhD
Director, The University of Chicago Medicine Comprehensive Cancer Center; Arthur and Marian Edelstein Professor of Medicine

CANCER MOONSHOT

Reaching for the Moon: An Historic Effort to Fight Cancer

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Identification of genetic variant in pediatric B-cell precursor acute lymphoblastic leukemia

Pediatric B-cell precursor acute lymphoblastic leukemia (B-ALL) is the most common childhood cancer and is characterized by the presence of too many immature B cells in the blood and bone marrow and recurring acquired chromosomal abnormalities. There are accumulating evidence from experimental models and genome-wide association studies (GWAS) that implicate several genetic or epigenetic susceptibility factors that impact disease onset and progression.

Kenan Onel, MD, PhD, associate professor of pediatrics, led an international group of scientists from the University of Chicago, Vanderbilt University, St. Jude Children’s Research Hospital, University of California San Francisco, Australia, France and Germany to discover additional pediatric BCP-ALL variants. They analyzed four pediatric ALL GWAS datasets, comprising more than 2,300 cases and 5,500 controls, and identified and replicated a specific location on chromosome band 9p21.3 associated with susceptibility to B-CP-ALL. Assessing epigenetic susceptibility factors, they found that it was correlated with reduced expression of CDKN2B which encodes a cell-cycle regulator and known tumor suppressor. Furthermore, they found that a previously identified variant in this gene locus was associated with controlling the expression of CDKN2A, another cell cycle tumor suppressor. These findings suggest that common inherited genetic variation at 9p21.3 is associated with increased risk for B-ALL and sheds light on the potential molecular mechanisms underlying the disease (Hungate et al., Nat Commun 7:10635, 2016).

Breast cancer risk is increased in childhood cancer survivors

With the remarkable improvements in survival rates for childhood cancer over the last several decades, over 80% of children currently diagnosed with cancer before the age of 21 will be cured. Unfortunately, childhood cancer survivors face a higher risk of premature death, the leading cause of which is cancer. Evidence indicates that female survivors exposed to chest radiation are at a much higher risk for breast cancer later in life, but it was unclear whether women not exposed to radiotherapy were also at an increased risk.

In a multi-institutional study led by Tara Henderson, MD, associate professor of pediatrics, using the large Childhood Cancer Survivor Study cohort of childhood cancer survivors treated at 26 centers in North America, breast cancer risk in women never exposed to chest radiotherapy was evaluated. The investigators found that these women had a four-fold increased risk to develop breast cancer at a young age when compared to the general population and the risk was highest amongsarcoma and leukemia survivors. Additionally, exposure to specific classes of chemotherapy, including alkylators and anthracyclines were associated with an increased breast cancer risk. This work identifies risk factors beyond chest radiotherapy for childhood cancer survivors to develop breast cancer and suggests that these women may benefit from early breast cancer surveillance to improve long term outcomes. (Henderson et al., J Clin Oncol December 23 2015 ahead of print, 2015).

This study was supported by grants from the National Cancer Institute (CA047251, CA114786, CA124100, CA14051, CA069685, CA06848, CA14051, CA14051) and the Cancer Prevention and Control scientific program. The Cancer Institute (U24CA55727, K07CA134935, R01CA136783 and R01CA136783) and/or the Cancer Prevention and Control scientific program.

Adolescent and young adult blood cancer patients experience psychological trauma

Although hematological malignancies only account for about 8 percent of all new cancer cases in the U.S. each year, they account for about 20 percent of cases in the adolescent and young adult (AYA) population aged 15-39. As AYA patients often face intense and lengthy treatment regimens and are at a vulnerable age, they are met with unique psychosocial challenges often underestimated by their health care providers.

A research team led by Christopher Daugherty, MD, professor of medicine, and involving Jennifer McNer, MS, professor of pediatrics, and Wendy Stock, MD, Anjuli Seth Najjak Professor in Leukemia, studied the unique problems faced by AYA patients with acute myeloid leukemia, acute lymphoblastic leukemia or lymphoma who were undergoing treatment or were in remission within two years of therapy completion. The investigators found that more than one quarter of all participants met the criteria for depression, 23 percent met for the criteria for anxiety, and 13 percent met the criteria for posttraumatic stress. Additionally, surveilling health care providers revealed a significant level of inaccuracies and inconsistency in provider perception of mental health status of these patients. This work highlights the need to consider and evaluate the psychological effects of cancer, encourage dialogue between physicians and patients, and provide the necessary support for young cancer patients. (Muffly et al., Cancer Jan 7 Epub ahead of print, 2016).

This study was supported by grants from the Cancer Institute (U24CA55727, K07CA134935, R01CA136783 and R01CA136783) and/or the Cancer Prevention and Control scientific program, and Drs. McNer and Stock are members of the Humaneness and Familial Maligancies scientific program.

2015 Comprehensive Cancer Center Annual Report

We are pleased to present our 2015 Annual Report!

• http://cancer.uchicago.edu/AnnualReport2015/

Within these pages you’ll find examples of how we’re answering cancer’s most challenging questions through innovative, individualized treatments. Thank you for all your support, and we look forward to seeing what 2016 brings.

Kathleen Goss, PhD

Breast cancer...
MEMBER NEWS

1 David Meltzer, MD, PhD, professor of medicine, is among 18 faculty members who recently received named or distinguished professorships. Meltzer was awarded the title of Fanny L. Pritzker Professor of Medicine, Economics and Public Policy.

2 Gini Fleming, MD, professor of medicine, is this year’s recipient of the Society of Gynecologic Oncology’s Harry Long Multidisciplinary Award, to recognize her outstanding contributions to the field of gynecologic cancers through leadership, mentorship, and scholarly collaborations. Dr. Fleming also received the distinction of Fellow of the American Society of Clinical Oncology (FASCO).

3 Philip Hoffman, MD, professor of medicine, was awarded the 2016 American Society of Clinical Oncology (ASCO) Excellence in Teaching Award, which recognizes an ASCO member who has inspired and shaped trainees’ practice of cancer medicine.

4 Olufumilayo I. Olopade, MBBS, Walter L. Palmer Distinguished Service Professor of Medicine and Human Genetics, and associate dean for global health, was awarded the Franklin D. Roosevelt Four Freedoms Medal on September 29 in New York City. The award recognizes Olopade’s path-finding research in Nigeria and America showing that women of African heritage can be genetically susceptible to more aggressive, earlier onset forms of breast cancer.

5 Karen Kim, MD, professor of medicine, is the recipient of a 2016 Impact Award from the Chicago Foundation for Women. The Impact Awards celebrate Chicago-area women and men for their dedication to increasing resources and opportunities for women and girls in the Chicago area.

6 Susan Cohn, MD, professor of pediatrics, was awarded the 2016 American Society of Clinical Oncology (ASCO) Pediatric Oncology Award. This award recognizes Cohn’s outstanding career and her scientific achievements in neuroblastoma. Dr. Cohn also received the distinction of Fellow of the American Society of Clinical Oncology (FASCO).

Comprehensive Cancer Center faculty and staff participated in November’s Movember Foundation movement to raise awareness about men’s health. Their “Monsters of the Mo” team raised more than $6,800 to support research.

University of Chicago Researchers Present at American Society of Hematology (ASH) Annual Meeting

Comprehensive Cancer Center researchers made a big contribution to the year’s premier scientific meeting on blood cancers, also called hematological – or heme – malignancies. The conference drew more than 25,000 attendees from around the world to discuss the latest biological discoveries, clinical trials and personalized therapies for leukemia, lymphoma and multiple myeloma. Read more on the Science Life blog: http://sciencelife.uchospitals.edu/2015/12/15/leaders-in-blood-cancer-research-and-care-share-latest-advances-at-ash-annual-meeting/
ALL IN FOR A CURE

The University of Chicago Cancer Research Foundation held its annual gala “All in for a Cure” on March 12, 2016 at the Michigan Shores Club in Wilmette. 180 attendees enjoyed dinner, dancing, live and silent auctions, and a lively Vegas casino. The Auxiliary Board is dedicated to raising funds to aid in the prevention and cure of cancer, and at this event, they raised over $200,000. Funds raised will support the work of clinical scientists Mark Applebaum, MD, clinical instructor of pediatrics, Megan McNerney, MD, PhD, assistant professor of pathology, and Blase Polite, MD, associate professor of medicine. The emcee was TV personality and author Jennifer Weigel and auctioneer was Karen Sorbo.

SAVE THE DATE! The UCCRF Women’s Board will celebrate 50 years of the Grand Auction on November 12, 2016. The gala is the most prestigious and longest running auction event in Chicago history. The Board has raised over $17 million for cancer research, which has enabled researchers to leverage additional grant funding of over $45 million. To learn more visit: cancerboard.org

UChicago Medicine Patient’s Personal Journey Inspires Bowie Benefit at Metro Chicago

A survivor of throat cancer, Metro owner Joe Shanahan was treated at the University of Chicago Medicine, which he credits with providing exceptional care and support. Upon hearing of David Bowie’s death and reflecting on his own experience with cancer, Shanahan approached Sons of the Silent Age and eagerly suggested they partner with the University of Chicago to raise money. For him the concert, which took place on March 4, was a way to pay tribute to both Bowie and the doctors who saved his life. Read more on Give to Medicine: https://givetomedicine.uchicago.edu/donor-stories/music-man’s-personal-journey-inspires-bowie-benefit

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CANCER CAMPAIGN
INQUIRY & IMPACT

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Cancer Campaign Giving

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GOAL

$350M