



Masonic Cancer Center

UNIVERSITY OF MINNESOTA

Comprehensive Cancer Center designated by the National Cancer Institute

Masonic Cancer Center

University of Minnesota

STRATEGIC PLAN

(2017-2021)

MISSION

Advancing Knowledge, Enhancing Care



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ABOUT THE MASONIC CANCER CENTER

OVERVIEW

The Masonic Cancer Center (MCC) is an NCI-designated Comprehensive Cancer Center dedicated to cancer research, education, and patient care for the citizens of Minnesota and the surrounding region. Since the time of the first award in 1997, there has been consistent growth of the membership and research base, enabling our center to further advance our knowledge and enhance care for our catchment area.

The MCC is organized into six Programs that focus on specific scientific themes:

Screening, Prevention, Etiology and Cancer

Survivorship; Carcinogenesis and Chemoprevention; Genetic Mechanisms; Cell Mechanisms: Immunology; and Transplant Biology and Therapy.

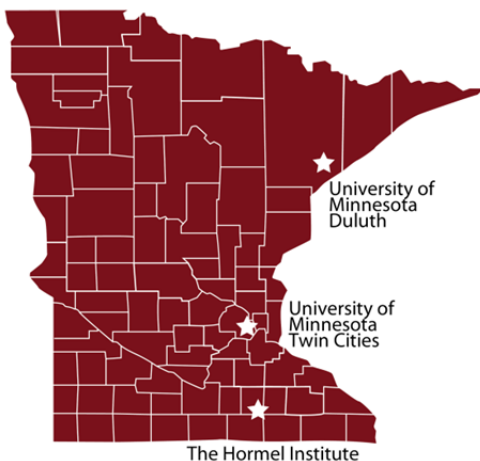
6 Mechanism-Based Research Programs



These programs work together to emphasize the translational pipeline. Several resources and organizational structures have been put into place to support this effort and to better connect the basic programmatic research with the clinic. These resources include a Cancer Research Translational Initiative to increase the number of investigator-initiated translational trials at MCC and the formation of Translational Working Groups (TWGs) that bring together researchers, clinicians, and others in the oncology community to solve problems in organ-site-specific cancers. We have also established several mechanisms to increase the involvement of the community, and particularly the underserved populations in our catchment area, in clinical research.

SERVING MINNESOTA

The Masonic Cancer Center serves as the hub for cancer research at the University of Minnesota. Our 500 members apply their expertise to the broad problem of cancer with research in cancer causes, prevention, treatment, outcomes, and survivorship. The progress we've seen in reducing the burden of cancer can be directly attributed to research advances.



Community engagement in cancer research is essential to reducing cancer's burden. We work within our catchment area, the State of Minnesota, through our three research sites, in the Twin Cities, Duluth and at the Hormel Institute, to engage community members and connect them with basic, translational, clinical, and population research on cancers prevalent in the state. The four leading causes of cancer death in Minnesota are: 1) lung and bronchus, 2) colorectal, 3) female breast, and 4) prostate.

STRATEGIC PLANNING PROCESS

The Masonic Cancer Center held a daylong strategic retreat of the Executive Committee, which yielded faculty-driven recommendations spanning all aspects of MCC activities and pointed to the need for a strategic plan to guide the process, consistent with prior External Advisory Board recommendations and Cancer Center Support Grant critiques. In 2015, the Masonic Cancer Center initiated a formal strategic planning process and began conversations with stakeholders to explore what the MCC could accomplish over the next 5 years.



Guided by the Executive Committee, the Research Programs and Translational Working Groups worked to identify key scientific priorities and the Fairview Oncology Service provided insight into clinical priorities. When the Executive Committee reviewed the identified scientific priorities, they clearly fell into two categories: **Areas of Existing Scientific Excellence**, which had deep and successful research bases that were doing groundbreaking work, and new areas of **Scientific Priorities for Growth** that could build on the areas of strength but take the research in new directions. These ideas were shared with numerous stakeholders, including the Clinical and Translational Science Institute; Hematology, Oncology, and Transplant Division; Department of Family Medicine’s Program in Health Disparities Research; Fairview Oncology Service Line, Pediatric Oncology Group, MCC researchers, Community Advisory Board, Medical School, and the Academic Health Center. After several rounds of review, the final version of the Strategic Plan was endorsed by the Executive Committee in June 2016. The finalized strategic priorities of the MCC will be used to advance our mission and to focus operational efforts.

Since the MCC Strategic Plan was formalized in July 2016, the Director’s Cabinet has carefully reviewed the priorities and research activities under each objective twice a year. They



recommended that internal experts with scientific expertise in the areas of the scientific priorities for growth be tapped to evaluate the progress towards these goals. These experts were identified and appointed by the Director’s Cabinet to six Strategic Action Committees (SACs), one for each scientific priority. The MCC’s Science Council oversees and receives regular reports from the SACs, detailing progress on how the MCC is addressing each strategic priority. They regularly report activities and metrics to the Science Council for discussion. The Associate Director for Basic Research and Science Council chair, then reports SAC activities and progress on the Strategic Plan to the Director’s Cabinet at the time of

the semi-annual progress reviews. This process ensures that the MCC’s evaluation of Strategic Plan progress is informed by adequate measurements and the input of topic-area experts and key stakeholders.

EXECUTIVE SUMMARY

Strategy Statement

We are driven to be the choice academic healthcare environment for patients, clinicians, scientists and students who seek exceptional, compassionate, precision cancer therapy; innovative clinical trials and prevention programs; cutting-edge research opportunities; and outstanding advanced education.

Strategic Objectives

- Support existing areas of research excellence – and expand on these strengths in six priority areas.
- Increase participation in research that addresses the cancer burdens of the people of Minnesota.
- Continue to develop an organization of faculty, staff, trainees and students that reflects our shared commitment to interdisciplinary, collaborative, translational research.
- Raise the profile of the MCC as a center of excellence for precision cancer therapies, cutting-edge research opportunities and outstanding advanced education.

Existing Areas of Scientific Excellence

- Tobacco research
- Cell therapy for hematologic malignancies
- Biomarkers to understand the mechanisms of carcinogenesis
- Innovative methods to identify and understand cancer genes
- Childhood cancer

Scientific Priorities for Growth

- Expand recent discoveries in immunotherapy and cellular therapeutics to include solid tumors.
- Enhance functional genomics strategies to further our understanding of cancer and develop new therapeutic avenues.
- Translate new chemoprevention agents into clinical trials for populations at increased risk for cancer, including cancer survivors.
- Use biomarkers to individualize cancer prevention and personalize treatment.
- Establish a new Minnesota-based cohort that includes the collection of biospecimens for investigation of genetics, epigenetics, microbiome, and immunity associated with cancer.
- Develop effective methods to increase adoption of evidence-based cancer prevention behaviors by vulnerable populations with disproportionate cancer burden in Minnesota.

THE STRATEGIC PLAN

Our Mission is to advance knowledge and enhance care. The Masonic Cancer Center fosters this mission by creating a collaborative research environment focused on the causes, prevention, detection, and treatment of cancer and cancer-related diseases; applying that knowledge to improve quality of life for patients and survivors; and sharing its discoveries with other scientists, students, professionals, and the community.

STRATEGIC OBJECTIVES

- 1** Support existing areas of research excellence – and expand on these strengths in six priority areas.
- 2** Increase participation in research that addresses the cancer burdens of the people of Minnesota.
- 3** Continue to develop an organization of faculty and researchers that reflects our shared commitment to interdisciplinary, collaborative, translational research.
- 4** Raise the profile of the MCC as a center of excellence for precision cancer therapies, cutting-edge research opportunities and outstanding advanced education.

OBJECTIVE ONE

Support existing areas of research excellence – and expand on these strengths in six priority areas.

OVERVIEW

To catalyze efforts towards the new scientific priorities, in 2017 MCC funded 24 pilot projects, disbursing \$1.065M to MCC investigators to answer preliminary research questions with the goal of applying for larger external NIH grants. Specific examples for each priority include:

1. Expand recent discoveries in immunotherapy and cellular therapeutics to include solid tumors - The MCC has given more NK cell infusions to patients with cancer than any other site in the world. Lessons learned from preclinical studies targeting NK cells for hematologic malignancies are being translated into solid tumor malignancies.

2. Enhance functional genomics strategies to further our understanding of cancer and develop new therapeutic avenues - A DNA repair deficiency profile improved the response of breast cancer to the combination of veliparib and carboplatin in the I-SPY 2 trial, suggesting that treatments can be individualized based on the molecular signature of the tumor.

3. Translate new chemoprevention agents into clinical trials for populations at increased risk for cancer, including cancer survivors - The Minnesota Cancer Clinical Trials Network's (MNCCTN) first trial is an MCC investigator-initiated chemoprevention clinical trial. The MCC is providing supplemental funds to scale the trial for statewide enrollment through MNCCTN.

4. Use biomarkers to individualize cancer prevention and personalize treatment – The MCC has identified that individual genetic variations in CYP2A6 may affect smoking behavior and contribute to lung cancer risk. This study concluded that genetic differences in *CYP2A6* influence nicotine metabolism and affect the number of cigarettes smoked. People with reduced CYP2A6 activity have lower levels of the tobacco-specific lung carcinogen NNK.

5. Establish a new Minnesota-based cohort that includes the collection of biospecimens for investigation of genetics, epigenetics, microbiome, and immunity associated with cancer. The 10,000 Families initiative began in 2017, with a pilot study that recruited a cohort of 160 families at the Minnesota State Fair, with participants ranging in age from 10 months to 97 years old.

6. Develop effective methods to increase adoption of evidence-based cancer prevention behaviors by vulnerable populations with disproportionate cancer burden in Minnesota - Somali immigrant women have low rates of cervical cancer screening because of cultural factors, limited exposure to information about screening, and low rates of annual gynecological visits. A pilot randomized controlled trial conducted by MCC members showed that Somali women who had access to a home-administered HPV test were 14 times more likely to undergo cervical cancer screening than Somali women who only had access to a standard clinical Pap test.

2017-2021 PLANS

Support existing areas of research excellence – and expand on these strengths in six priority areas.

GOAL	ACTIONS
<p>1. Sustain support for existing areas of excellence</p>	<ul style="list-style-type: none"> A. Support tobacco research B. Support cell therapy for hematologic malignancies C. Support biomarkers to understand the mechanisms of carcinogenesis D. Support innovative methods to identify and understand cancer genes E. Support childhood cancer
<p>2. Prioritize funds for new research priorities for resource support</p>	<ul style="list-style-type: none"> A. Expand recent discoveries in immunotherapy and cellular therapeutics to include solid tumors B. Enhance functional genomics strategies to further our understanding of cancer and develop new therapeutic avenues C. Translate new chemoprevention agents into clinical trials for populations at increased risk for cancer including cancer survivors D. Use biomarkers to individualize cancer prevention and personalize treatment E. Establish a new Minnesota-based cohort that includes the collection of biospecimens for investigation of genetics, epigenetics, microbiome, and immunity associated with cancer F. Develop effective methods to increase adoption of evidence-based cancer prevention behaviors by vulnerable populations with disproportionate cancer burden in Minnesota
<p>3. Invest in infrastructure</p>	<ul style="list-style-type: none"> A. Develop state-of-the-art biorepositories with clinical annotation B. Develop a cancer center-supported clinical registry (including outcomes) C. Invest in cancer bioinformatics for genomic computation D. Create opportunities for population science researchers to collaborate with each scientific program

OBJECTIVE TWO

Increase participation in research that addresses the cancer burdens of the people of Minnesota.

OVERVIEW

Community engagement in cancer research is essential to reducing cancer's burden. We work within our catchment area, the State of Minnesota, to engage community members and connect them with basic, translational, clinical, and population research on cancers prevalent in the state. The four leading causes of cancer death in Minnesota are: 1) lung and bronchus, 2) colorectal, 3) female breast, and 4) prostate. Cancers that disproportionately affect subgroups of Minnesotans include lung cancer in American Indian men and women, leukemia in children, HPV-driven cancers in Somali women, and mesothelioma in miners in rural northeast Minnesota. The Masonic Cancer Center has ongoing research relevant to all of these malignancies.

Increasing clinical trial participation was identified as one of the best ways to advance the mission of the MCC. We will work towards the following goals:

- ***Open research trials that address the most prevalent cancers in Minnesota.*** We are balancing our portfolio of trials to address the most common cancers in Minnesota and in specific minority communities. These will include interventional and non-interventional studies driven by investigators, industry, and patient needs. Since 2016, we have opened 72 solid tumor interventional treatment clinical trials, including 11 lung cancer clinical trials (more Minnesotans die each year from lung cancer than from the next four leading causes of cancer death combined: breast, prostate, colon, and pancreas. Through the MNCCTN, we will open additional trials of targeted interest to the population of Minnesota.
- ***Address challenges with recruiting.*** We will increase awareness of clinical trials among patients and oncologists through education and advertising. We currently staff a Cancer Information Line with a registered nurse who can answer questions about the clinical trial process and direct patients to appropriate trials that are recruiting. She also uses the electronic medical record and OnCore to identify patients who may be eligible for trials. We partnered with Fairview Health System to implement ViaOncology's Pathways software solution, which make MCC trials the first choice for a patient's care when appropriate.

2017-2021 PLANS

Increase participation in research that addresses the cancer burdens of the people of Minnesota.

GOAL	ACTIONS
<p>1. Open research trials which address the most prevalent cancers in Minnesota</p>	<ul style="list-style-type: none"> A. Balance the portfolio of trials to include investigator academic credit trials with industry trials addressing patient needs B. Track MCC trial portfolio to report protocols open to accrual by type and clinical research category C. Balance the portfolio to address cancers afflicting people in the State of Minnesota
<p>2. Address the challenges of recruiting an eligible patient to an appropriate clinical trial</p>	<ul style="list-style-type: none"> A. Increase patient and clinician awareness of cancer clinical trials B. Identify patients who may be eligible for a certain trial
<p>3. Increase minority participation in research with a focus on decreasing disease burden in minority populations</p>	<ul style="list-style-type: none"> A. Create a role for clinical trial recruiters who look like the minority patients we are trying to recruit B. Facilitate population targeting roundtables for: Native Americans, SE Asians-Hmong and Laotian, Somali, Outstate Minnesotans C. Strengthen disparity and diversity-focused partnerships D. Ensure minority populations are not inadvertently excluded on new clinical trials
<p>4. Open clinical trials faster</p>	<ul style="list-style-type: none"> A. Decrease the amount of time it takes to move a clinical trial through the setup process in the Clinical Trials Office B. Support university-wide efforts to implement Universal Consent for all patients in the University of Minnesota Health Cancer Care system to use their clinical records and biospecimens for research

OBJECTIVE THREE

Continue to develop an organization of faculty, staff, trainees and students that reflects our shared commitment to interdisciplinary, collaborative, translational research.

OVERVIEW

We have strategically recruited faculty in conjunction with clinical and academic departments, with particular focus on faculty with interests in clinical trials, solid-tumor oncology, immunotherapy, and epidemiology. We have hired faculty members who study solid tumors, an enormous undertaking conducted in conjunction with University of Minnesota Health Cancer Care and the academic departments. We will further incentivize clinical faculty to conduct clinical research and will educate basic and population science researchers in translational practices. Interdisciplinary translational research will be promoted through inclusion of basic and population scientists in the Translational Working Groups.

The MCC is positioned to continue this objective by continuing to provide start-up support for newly recruited faculty in research areas key to the Scientific Priorities for Growth, including:

- Immunotherapies and cellular therapeutics applied to solid tumors
- Functional genomics
- Biomarker development for individualized treatment applications

Additionally, supplemental funding for the pre-R01 pilot funding mechanism will continue, a program that has grown and shown increased returns on the investments made in the past five years.

2017-2021 PLANS

Continue to develop an organization of faculty, staff, trainees and students that reflects our shared commitment to interdisciplinary, collaborative, translational research.

GOAL	ACTIONS
1. Conduct strategic recruitment of new and established faculty in conjunction with clinical departments	<ul style="list-style-type: none"> A. Support faculty recruitment with clinical and research expertise in Translational Genomics in Gastrointestinal-tract cancer B. Support faculty recruitment with clinical and research expertise in Survivorship C. Support faculty recruitment with clinical and research expertise in solid tumors: Lung, Breast, Gastrointestinal, and Genitourinary
2. Enhance diversity of MCC researchers	<ul style="list-style-type: none"> A. Design and implement a plan to emphasize diversity in all faculty and post doc recruitments with MCC support B. Design and implement a plan to retain diverse faculty and post docs C. Enhance summer programs for diverse interns in cancer research
3. Advocate for Incentives for behaviors which enhance Clinical Research	<ul style="list-style-type: none"> A. Create and implement tracking and incentives for clinicians who enroll patients on trials B. Create and implement tracking and incentives (including promotion) for clinical researchers who mentor C. Develop standard startup package for all new cancer clinical researchers D. Partner with the Clinical and Translational Science Institute to develop a Clinical Research Career Path E. Develop metric-driven scorecard for each MCC member
4. Educate basic & population science researchers in translational research practices	<ul style="list-style-type: none"> A. Expose basic and population science researchers to best practices in clinical research training B. Assess existing mentoring to identify and fill gaps C. Mentor new basic researchers by pairing with experienced, successful clinical researchers D. Enhance the T32 training grant program with supplemental translational education
5. Promote interdisciplinary translational research through the TWG mechanism	<ul style="list-style-type: none"> A. Fund pilot grants to support Translational Working Group implementations of the best interventional or prevention research opportunities as determined by TWG membership B. Create the expectation that population science researchers are critical members of a Translational Working Group
6. Effectively work with partners in translational research	<ul style="list-style-type: none"> A. Influence the development of policies and processes pertaining to clinical research across University of Minnesota Health Cancer Care B. Maintain and enhance close partnerships with Clinical and Translational Science Institute, Vice President of Research, University of Minnesota Health Cancer Care C. Strive to leverage the strengths of other institutions and organizations so that we can focus on our particular strengths
7. Invest in education and training	<ul style="list-style-type: none"> A. Establish leadership, educational, and engagement initiatives to keep our faculty and staff invested in the MCC mission B. Create programs and initiatives to support and educate students and trainees in the pipeline of cancer research

OBJECTIVE FOUR

Raise the profile of the MCC as a center of excellence for precision cancer therapies, cutting-edge research opportunities and outstanding advanced education.

OVERVIEW

Marketing and branding initiatives and increased communication across the Masonic Cancer Center, the University of Minnesota, and Minnesota communities will be used to create awareness of MCC activities and accomplishments and to set standards for MCC member collaboration and productivity.

Additionally, in conjunction with the MCC Education office, we are ensuring that Minnesota has a robust supply of investigators performing cutting-edge cancer research. To achieve this, we will provide outstanding training environments to attract promising young scientists and to develop the careers of our current cancer researchers. We also must diversify our workforce both to reflect the changing demographics of our catchment area but, more importantly, to bring fresh perspectives that will accelerate cancer research.

To meet these goals, we propose to:

- Implement and expand initiatives that will increase the number of new trainees from populations typically under-represented in cancer research in Minnesota (e.g., with a new focus on MN American Indians)
- Enhance the career development of predoctoral, postdoctoral, and junior faculty cancer researchers
- Facilitate faculty-led clinical research studies by partnering with the Masonic Cancer Center's newly established Clinical Science Research Council
- Support Masonic Cancer Center faculty by hosting monthly faculty data clubs and by developing and managing personalized research portfolios for each faculty member
- Leverage career development opportunities provided by other institutional entities such as the UMN Clinical and Translational Science Institute

2017-2021 PLANS

Raise the profile of the MCC as a center of excellence for precision cancer therapies, cutting-edge research opportunities and outstanding advanced education.

GOAL	ACTIONS
<p>1. Communicate and represent a clear and compelling brand</p>	<ul style="list-style-type: none"> A. Create marketing materials of the Strategy Statement B. Design and maintain a website that conveys our brand to all visitors to the site C. Create clear and consistent identity usage including branding images, physical artifacts (e.g., signage, white coat logos)
<p>2. Increase value of the MCC brand and services with patient communities and physicians/professionals</p>	<ul style="list-style-type: none"> A. Develop and execute a plan to provide patient information/access and updates and news to internal and external communities B. Integrate MCC website and media presence with University of Minnesota Health Cancer Care's C. Create targeted materials for physicians at University of Minnesota Health Cancer Care sites outside of the University D. Actively and aggressively market events which the MCC sponsors to drive additional attendance, awareness, and media coverage E. Create a signature Masonic Cancer Center event F. Partner with the Masons to market the MCC and University of Minnesota Health Cancer Care in outstate Minnesota
<p>3. Increase value of the MCC within the University</p>	<ul style="list-style-type: none"> A. Increase the value of MCC membership to researchers and clinicians B. Present the MCC accomplishments, plan, and resources annually to all Medical school departments and selective divisions, to College of Pharmacy, to Lab Medicine and Pathology, to Epidemiology, College of Science and Engineering, and other areas of the university to educate and update the knowledge of the MCC to all groups C. Convene an Internal Advisory Board – semi-annually D. Recruit MCC advisors and leaders from non-Academic Health Center departments and centers



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Masonic Cancer Center Mission

Our Mission is to advance knowledge and enhance care. The Masonic Cancer Center fosters this mission by creating a collaborative research environment focused on the causes, prevention, detection, and treatment of cancer and cancer-related diseases; applying that knowledge to improve quality of life for patients and survivors; and sharing its discoveries with other scientists, students, professionals, and the community.

