Bringing Cancer Care Closer to Rural Nebraska • Innovation That's Changing Patient Care • How Philanthropy Powers Discovery



Building the Future of Cancer Care Through Research

Nebraska Medicine

FRED & PAMELA BUFFETT CANCER CENTER

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A Future for All Nebraskans

When I joined the Fred & Pamela Buffett Cancer Center in 2023, I saw an extraordinary opportunity. We already had a strong National Cancer Institute–designated cancer center built on decades of excellence in research and patient care. Now, together, we have the opportunity to build something even greater.

That strong foundation exists because of the vision and leadership of my predecessor, Ken Cowan, MD, PhD, who spent two decades building an outstanding cancer center.

As Nebraska's only National Cancer Institute–designated cancer center, our responsibility extends to every Nebraska county.

Nebraska's landscape, industries and geography create distinct challenges when it comes to cancer prevention and care. Environmental exposures, along with high rates of obesity, tobacco use and alcohol misuse, contribute to cancer risk. Reaching rural communities with screening, prevention information and clinical trials presents another challenge, but it is one we are determined to meet.

We need to better understand why cancer rates are high here, why too many Nebraskans do not receive recommended screenings and how we can support healthier communities. That means deepening partnerships across the state, listening to the people we serve and ensuring our research and programs address their greatest needs.

To support our evolution from a clinical cancer center to a comprehensive one, we are investing in population science, prevention, community outreach and translational research that moves discoveries from the laboratory to patients more quickly. This is the work that will define our future and help us pursue our ambitious goal of making Nebraska the healthiest state in the nation within the next decade.

Since arriving in Nebraska, I have quickly come to admire the resilience, resourcefulness and strong sense of community I encounter everywhere I go. Cancer care is also deeply personal. Each morning, I enter the Fred & Pamela Buffett Cancer Center alongside our patients, a daily reminder of why we are here and who we are working for.



"We are investing in population science, prevention, community outreach and translational research that moves discoveries from the laboratory to patients more quickly."

— JOANN B. SWEASY, PHD

As you read these pages, I hope you will see what I see every day: dedicated people asking bold questions, pursuing new discoveries and finding better ways to serve patients across Nebraska. Their work gives me tremendous optimism not only for the future of our cancer center but for the future health of our state.

Sincerely,

Joann B Sweasy

Joann B. Sweasy, PhD
Director, Fred & Pamela Buffett Cancer Center



Mission

As the only National Cancer Institute-designated cancer center in Nebraska, our mission is to understand, prevent and treat cancer through leading-edge research, exceptional patient care, premier education and training, and meaningful outreach to all Nebraskans and beyond.

Vision

Our vision is to decrease the cancer burden of Nebraska and beyond and become one of the nation's premier comprehensive cancer centers through innovative research that integrates next generation cancer prevention, environmental drivers of cancer and cancer therapy. The Fred & Pamela Buffett Cancer Center will "Elevate the Good Life, Free of Cancer."

Strategic Plan

The Fred & Pamela Buffett Cancer Center's five-year strategic plan provides a road map for advancing our mission and vision. Developed with input from researchers, clinicians, community advisers and partners across the state, the plan is organized around three transdisciplinary research themes. Together, they focus our efforts on the areas where we believe we can make the greatest difference.

OUR RESEARCH THEMES

1 **Cancer and Environmental Circumstances**

Cancer risk and access to care are shaped in part by where people live and work. With 90% of Nebraska devoted to farming and ranching and many residents living in rural communities, our researchers are studying how environmental exposures influence cancer risk. They are also addressing barriers that can limit access to prevention, screening, treatment and clinical trials.

2 **Novel Cancer Therapeutic Interventions**

We are advancing cancer therapies designed to make treatment more precise, personalized and effective. Our researchers are studying targeted therapies, nanoparticles, the tumor microenvironment, the gut microbiome, therapeutic resistance, and cellular, gene and cancer vaccine therapies to improve treatment options for patients.

As more people live longer after cancer, we are also expanding survivorship research and developing personalized supportive care to help patients thrive long after treatment ends.

3 **Next Generation Cancer Prevention**

Nebraska communities face higher rates of several cancer risk factors, including tobacco use, obesity and excessive alcohol use, as well as lower screening rates for several common cancers. We believe lasting behavior change must be intentionally designed and supported through coordinated systems.

Our next generation prevention research combines behavioral science, communication strategies and public policy to help more people reduce their cancer risk.

We are rapidly putting this strategic plan into action. Through pilot funding, we are accelerating innovative, transdisciplinary research projects designed to address some of cancer's most complex challenges.

OUR FOCUS

Cancer and Environmental Circumstances

Where someone lives should not determine whether they can access cancer prevention, screening, treatment or research. Community Outreach and Engagement at the Fred & Pamela Buffett Cancer Center works with public health departments, health systems, state agencies and trusted community partners to identify gaps and bring resources to rural communities. Using county- and community-level data, the team guides targeted outreach and ensures rural voices help shape cancer control planning across Nebraska.



RURAL NEBRASKA AT A GLANCE

55%
of Nebraska is classified as rural land

>90%
of the state is devoted to farming and ranching

EXTENDING OUR REACH

1,100
agricultural producers and pesticide applicators provided with cancer prevention and screening resources during the first year of the statewide Pesticide Safety Education Program pilot

KRVN
Founded 75 years ago, the farmer-owned radio network regarded as the Rural Voice of Nebraska partnered with the Fred & Pamela Buffett Cancer Center to create a "Health Across Nebraska" series that inspires cancer prevention and screening through well-known personalities.

WHY THIS WORK MATTERS

Rural Nebraskans experience higher rates of chronic disease, including cancer, while also facing greater barriers to care. Long travel distances, health care workforce shortages and transportation challenges can limit access to prevention, screening and treatment. These barriers may contribute to missed screenings, delayed diagnoses and reduced access to treatment and survivorship support.

MEETING NEBRASKANS WHERE THEY ARE

Nebraska Extension provides a trusted local presence in every county. Through the Fred & Pamela Buffett Cancer Center's 155-plus partner organizations, cancer prevention and screening information can be incorporated into programs Nebraskans already know and trust. This statewide network helps bring education and resources directly to rural communities, reducing the need for residents to travel to access reliable information.

Connecting Communities to Cancer Prevention

Our Community Outreach and Engagement team connects Nebraskans with cancer education, prevention resources and screenings.



For many Nebraskans, especially those living in rural and underserved communities, barriers such as distance, transportation and limited access to care can delay lifesaving cancer prevention and screening services. As Nebraska's only National Cancer Institute–designated cancer center, the Fred & Pamela Buffett Cancer Center works to close those gaps and improve cancer outcomes statewide.

One-Stop Cancer Shop

Established in fall 2024, this community-based initiative improves access to lifesaving cancer prevention and early detection services for underserved and high-risk populations. In 2025, the team partnered with the College of Nursing and several other UNMC departments, 25 community organizations and 19 faith-based organizations to connect eligible participants with preventive services, including:

- Low-dose CT scans for lung cancer screening
- Mammograms
- Prostate-specific antigen tests
- Fecal immunochemical test kits for colorectal cancer screening
- HPV vaccinations
- Blood pressure and blood glucose screenings
- Breast self-exam education
- Skin cancer screenings

The program provided 158 cancer screenings and reached populations that experience disproportionate health disparities, including rural, Black, Native American, Hispanic and Latino people, as well as uninsured and low-income individuals.

Brake for Breakfast

This free drive-thru cancer prevention and screening awareness event is led by Nebraska Medicine and the Fred & Pamela Buffett

250%
Increase in cancer screenings provided through Community Outreach and Engagement programs from 2024 to 2025

155+
Partners helping bring cancer education and events to Nebraskans



Cancer Center in partnership with Nebraska Extension and community organizations statewide. It is designed to increase awareness of prevention and early detection, particularly among rural, underserved and medically vulnerable populations.

The 2026 event was held in 10 Nebraska communities and attracted approximately 1,500 participants, including 950 from rural areas. Attendees received a complimentary breakfast, educational materials about cancer prevention, and recommended screening and support services, helping reduce barriers to early detection and care.

Nebraska Extension Partnership

Combining Fred & Pamela Buffett Cancer Center's expertise with Nebraska Extension's statewide network and trusted community relationships expands access to cancer prevention and screening information, particularly in rural and underserved communities. Nebraska Extension maintains a local presence in all 93 counties.

One example is the Pesticide Safety Education Program, which teaches agricultural workers about safe handling, exposure reduction and environmental protection. The team incorporated cancer prevention and screening segments into the required training.

The program reached more than 1,100 people across 15 counties. Participants said they generally understood the importance of preventive care, but competing priorities often delayed follow-up.

Several participants reported plans to discuss cancer screening and preventive care with their health care providers following the training, demonstrating the program's ability to translate education into intended action.

Latina Red Dress

In addition to increasing access to screening and prevention services, the team also educates communities about environmental factors that may influence cancer risk. The Latina Red Dress event, also known as La Madre es El Corazón de la Familia — The Mother Is the Heart of the Family — is an annual community health and wellness event in Scottsbluff, Nebraska.

The Fred & Pamela Buffett Cancer Center supports the event with presentations from doctors, researchers and cancer survivors who share health information and personal experiences. More than 250 Latinas attend each year.

Education on Environmental Dangers

Environmental exposures at home and work can influence cancer risk. The team educates Nebraskans about two common concerns: radon and nitrate.

Nebraska has some of the nation's highest radon levels, although levels vary by home. Residents can test their homes and use the Nebraska Radon Dashboard to learn more about local risk.

Nitrate, the most common contaminant in Nebraska well water, can enter groundwater through fertilizer, animal waste and septic systems. Because nitrate levels can change, annual testing helps ensure private well water remains safe.

Digital Outreach by the Numbers

Digital tools help the team connect Nebraskans with trusted cancer prevention, screening and risk-reduction resources, regardless of distance.

102%
Increase in Community Outreach and Engagement website views since 2025

268%
Increase in unique website visitors

262K+
People reached through social media in 2025



Taking to the Airwaves



The Fred & Pamela Buffett Cancer Center is tapping into Rural Radio's reach and trusted voice to encourage more rural Nebraskans to get cancer screenings.

Rural Nebraskans experience lower rates of recommended cancer screening, which can contribute to later-stage diagnoses and poorer cancer outcomes.

"Lower screening rates mean lower detection, which means more cancers," says Douglas Kristensen, the longest-serving chancellor in the history of the University of Nebraska. "That's a bad combination."

Kristensen, a longtime advocate for expanding health care and health education in rural Nebraska, wants to see that change. And he is using his voice — quite literally — to help. Through a new partnership between the Fred & Pamela Buffett Cancer Center and the Rural Radio Network, Kristensen is sharing his own cancer story and encouraging rural Nebraskans to get screened.

Advocating for Rural Health

Kristensen's commitment to rural health goes back decades. As chancellor, he helped secure legislative support for UNMC's first rural health building in Kearney, which was funded through the same legislation as the Fred & Pamela Buffett Cancer Center.

The Kearney expansion was designed to do more than bring health education

"Our goal is to try to get stories out there that these scans and treatments are not that bad. There are a lot of myths out there, and if we really want to increase the survivability rates of rural Nebraskans, we need to do it through education." —DOUGLAS KRISTENSEN

to rural Nebraska. The goal was to train health professionals in rural communities in hopes they would stay and practice there. Roughly 85% of those trained in Kearney have remained in rural Nebraska.

"That was our proof of concept," Kristensen says.

That success led to further expansion, including additional programs and a second building that will make the Kearney campus the largest rural health education complex in the country.

"This fall, we'll start the first cohorts educating physicians in Kearney," he says. "If 80% or 85% of them stay, that's a big win for rural Nebraska."

85%

Roughly 85% of health professionals trained in Kearney remained in rural Nebraska — helping strengthen the health care workforce serving rural communities.

The Reach of Rural Radio

Building facilities and training health professionals is only one part of improving rural health. Another is helping more rural Nebraskans understand the importance of cancer screening.

Through the Health Across Nebraska series, the Fred & Pamela Buffett Cancer Center is using a trusted rural media voice to increase awareness of cancer prevention, screening and early detection. Some people may feel they do not have time, question whether screening is necessary or worry that the tests will be invasive.

Kristensen knows the value of screening firsthand. He was diagnosed with prostate cancer despite having no symptoms and was successfully treated at the Fred & Pamela Buffett Cancer Center.

"The screenings are not that invasive," he says. "There have been huge changes, and they really can improve the quality of your life and the length of your life."

Now, Kristensen is working with the Fred & Pamela Buffett Cancer Center and Rural Radio to share his story and encourage others to get screened. It is a natural fit for someone with a long history at KRVN. In the late 1980s, Kristensen delivered weekly legislative reports on the station while serving in the Nebraska Legislature. He later provided regular university reports as chancellor.

"The Rural Radio Network to me is the key," he says. "It reaches the most people."

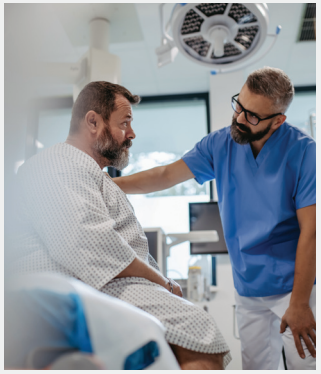
The farmer-owned Rural Radio Network provides daily agricultural news, grain and livestock market updates, and other farming-related programming. For the Health Across Nebraska series, KRVN, the Rural Voice of Nebraska, partnered with the Fred & Pamela Buffett Cancer Center. The first episode features Kristensen's story.

"Our goal is to try to get stories out there that these scans and treatments are not that bad," Kristensen says. "There are a lot of myths out there, and if we really want to increase the survivability rates of rural Nebraskans, we need to do it through education."

For Kristensen, Rural Radio's greatest value as an educational partner comes down to one thing: trust.

"They are the most trusted source of information for rural Nebraska," he says. "They've got a large listenership."

By pairing trusted community voices with evidence-based cancer information, the partnership aims to increase awareness of recommended screenings and help reduce the burden of cancer across rural Nebraska.



Don't Wait for Symptoms

Cancer screening is designed to find some cancers before symptoms appear, when there may be more treatment options. That was the case for Douglas Kristensen, whose prostate cancer was detected even though he felt healthy. Screening recommendations vary based on age, family history and other risk factors. Talk with your doctor about which screenings are right for you and when you should have them.

How Environment Shapes Cancer Risk

From agrochemicals to access to care, researchers are examining how place can influence cancer across Nebraska.



Living in Nebraska has plenty of advantages. It may also come with a higher risk for certain types of cancer, and that risk isn't the same everywhere in the state. Researchers at UNMC and the Fred & Pamela Buffett Cancer Center are working to understand why.

Under the Cancer and Environmental Circumstances theme, researchers are examining how environmental exposures and social factors can shape opportunities for prevention, early detection and treatment — and ultimately influence cancer risk and outcomes across Nebraska.

The Epigenome and Social Determinants of Health

Edward S. Peters, DMD, SM, ScD, FACE, the Tim Hawks Chair in Cancer Prevention and Population Science, studies the epigenome, a set of biological changes that affect how genes work.

"Everyone's born with their genetic pattern, and that is invariably fixed, but the epigenome is beyond the genes themselves," Dr. Peters explains. "The epigenome is modifiable. It reflects the environment. It reflects what you're exposed to, what you eat, what your stresses are."

Because the epigenome can reflect exposures and experiences, it offers one window into how conditions where people live and work may affect health. Differences in cancer outcomes may reflect income, education, occupation, access to care or, more likely, a combination.

"People live in complex environments, so it's not just one thing," Dr. Peters says.

Environmental Exposures

For Richard Remigio, PhD, MPhil, MS, of the UNMC College of Public Health Department of Environmental, Agricultural and Occupational Health, the "constellation of exposures" that may affect Nebraskans' cancer risk is at the heart of his work.

> "The epigenome … reflects what you're exposed to, what you eat, what your stresses are." —EDWARD S. PETERS, DMD, SM, SCD, FACE

Those exposures include private wells, pesticides, radon and proximity to agricultural burns. Dr. Remigio has studied atrazine, a pesticide heavily applied to corn, sorghum and soy in Nebraska. Long-term studies have identified associations between atrazine exposure and kidney cancer, as well as potential links to early-onset prostate cancer and non-Hodgkin lymphoma.

Groundwater and Cancer Risk

Nitrate contamination is probably Nebraska's No. 1 water-quality issue, says Jesse Bell, PhD, director of UNMC's Water, Climate and Health Program. Fertilizers and pesticides can enter groundwater and drinking water.

Dr. Bell's team has found higher rates of certain cancers — particularly pediatric and central nervous system cancers — in areas with more nitrate and atrazine in drinking water.

With 300,000 to 400,000 Nebraskans relying on private wells, he encourages regular testing and steps to reduce exposure. Financial assistance is also available for testing and filtration systems.

The work reflects a broader goal across the Fred & Pamela Buffett Cancer Center: combining research, community partnerships and education to better understand environmental cancer risks and improve cancer outcomes across Nebraska.

"It isn't just about doing research," Dr. Bell says. "It's actually about going into the community, having hard conversations, and partnering with community members so that we can find opportunities for them to help address this issue and reduce risk."

OUR FOCUS

Novel Cancer Therapeutic Interventions



Every breakt hrough cancer t reatment begins as a quest ion in a labo ratory. Scientists identify a promising target, uncover a new biological pathway or develop a novel therapy designed to attack cancer more effectively. But discovery alone is not enough. To change lives, those discoveries must make the journey from research bench to patient bedside.

At the Fred & Pamela Buffett Cancer Center, that journey is becoming faster, stronger and more accessible for patients across Nebraska.

BUILDING ON A STRONG FOUNDATION

The Fred & Pamela Buffett Cancer Center's growing Phase I program is not being built from scratch. It is being built on a strong and successful foundation of clinical research that currently includes more than 135 interventional clinical trials, with 120 interventional treatment studies actively evaluating new approaches to cancer care.

1
National Cancer Institute-designated cancer center in Nebraska

83
New clinical trials opened since last year

11
Disease-focused multidisciplinary teams

134
Member researchers

WHY THIS WORK MATTERS

Understanding the biology of cancer is fundamental to developing more effective, personalized treatments. Every advance in cancer care begins with scientific discovery, as researchers work to uncover the genetic, molecular and immune system mechanisms that drive cancer growth and progression. At the Fred & Pamela Buffett Cancer Center, scientists and clinicians work side by side to translate those discoveries into new therapeutic approaches that can be evaluated in patients. Through clinical trials, particularly early-phase studies, promising treatments move from the laboratory into the clinic, offering patients access to innovative options years before they may become widely available.

LOOKING AHEAD

We are expanding opportunities for patients to access cutting-edge therapies through clinical trials, including early-phase studies that evaluate promising new treatments. By strengthening partnerships with national research networks, the National Cancer Institute and industry collaborators, we are accelerating the development of therapies that are more effective, more precise and easier for patients to receive.

Discovery in Action

Whether it begins in the laboratory, the clinic or the community, every breakthrough shares the same goal: helping patients receive better cancer care. Across the Fred & Pamela Buffett Cancer Center, researchers and clinicians are transforming new ideas into better treatments, smarter clinical trials and more coordinated care.





Turning Big Data Into Breakthroughs

How our researchers are accelerating clinical trials to find answers for glioblastoma.

Glioblastoma is a rare but aggressive brain tumor, representing about one half of 1% of all cancers in adult patients. Even with treatment, survival averages just 12 to 15 months. And for reasons we don't completely understand, Nebraska has one of the nation's highest rates of glioblastoma.

Researchers at the Fred & Pamela Buffett Cancer Center are working to identify better treatments more quickly by combining bioinformatics, laboratory innovation and clinical trials in new ways.

A Novel Mouse Model

Glioblastoma treatment commonly involves a surgical resection of the tumor, when possible. That's typically followed by chemotherapy with a drug called temozolomide.

One important step toward discovering new treatments was developing a novel mouse model. Traditional animal models, which implant tumor cells into the mouse's hip, don't accurately reflect how glioblastoma behaves in the brain.

"It's crucial to see how a drug really interacts in the brain and whether it can truly get through the blood-brain barrier," says Nicole Shonka, MD, co-chair of the Brain Tumor Working Group.

Dr. Shonka's lab developed a mouse model that spontaneously acquires glioblastoma in its brain. The lab is the only one in the country using this particular mouse model.

The Role of Bioinformatics

The lab also used a bioinformatics tool called connectivity mapping to compare the molecular signature of glioblastoma against millions of FDA-approved drugs, identifying those most likely to fight the tumor.

Dr. Shonka's team then evaluated the list generated by the tool and selected abexinostat for further testing.

> "We see more brain cancer in both pediatric and adult patients in Nebraska than the rest of the nation."
>
> —NICOLE SHONKA, MD

Using the lab's novel mouse model, the team found that mice survived much longer when abexinostat was combined with temozolomide, the current standard chemotherapy for glioblastoma. Those results led to National Institutes of Health funding in 2022 and the launch of a Phase I clinical trial in late 2023 to determine a safe dose of the combination therapy before advancing to larger patient studies.

With enrollment in the trial recently complete, Dr. Shonka expects to begin analyzing the data in the coming months. Although the trial's primary purpose is to establish a safe dose, the team is already seeing encouraging early signs of prolonged survival. And by combining big data, a one-of-a-kind laboratory model and clinical research, they are finding a way to bring new treatments to glioblastoma patients faster.

Taking a Team Approach to Pancreatic Cancer Care

At the Pancreatic Specialty Disease Clinic, multiple specialists come together to give patients what they want: a concise, clear treatment plan.

Pancreatic cancer is one of the most challenging cancers to treat. At the Fred & Pamela Buffett Cancer Center, we designed the Pancreatic Specialty Disease Clinic to give patients the team approach they deserve, so that their care is streamlined and free of unnecessary delays.

A Team Approach

The clinic, which opened in 2022, is the only one of its kind in the region and one of only a few nationally. In addition to pancreatic cancer and suspected cancer, the clinic also treats premalignant or precancerous tumors in the pancreas, pancreatic cysts and pancreatitis, the inflammation of the pancreas.

Because valuable time can be lost going from specialist to specialist to build a treatment plan, our clinic brings all of our specialties together from the beginning of a patient's journey to build the plan. The clinic's research team also participates in every treatment planning meeting to make sure every single patient is screened for clinical trials.



Nebraska Medicine | Fred & Pamela Buffett Cancer Center has been nationally recognized as a Center of Excellence by the National Pancreas Foundation for outstanding clinical care and scientific innovation — the only pancreatic cancer center within a 350-mile radius to have earned this combined designation.



Patient Benefits

The clinic benefits our patients in a number of ways:



1 **FAST ACCESS TO CARE**
Patients complete the scans, biopsies and blood work needed to guide treatment. This is usually done within a week of scheduling.

2 **A TEAM OF SPECIALISTS**
Medical oncologists, radiation oncologists, interventional oncologists, gastroenterologists, surgeons, dietitians, genetic counselors, radiologists, pathologists and social workers review each patient's scans and medical history together to determine the best path forward.

3 **A CONCISE PLAN**
When patients meet with their physician, they receive a treatment plan the entire team has agreed upon.

"Being able to give the patient a concise plan that we've all agreed on expedites their care and cuts down a lot on anxiety because any uncertainty introduced at any point can be really, really distressing," says Kelsey Klute, MD, associate professor, UNMC Division of Medical Oncology and medical director of the Pancreatic Specialty Disease Clinic. "By having everyone in the room, we elevate the level of care that we give."

Rethinking Prostate Cancer Treatment

A clinical trial at the Fred & Pamela Buffett Cancer Center is testing whether a treatment designed to reduce travel for rural patients can also become the next standard of care.

For men with aggressive prostate cancer, the current standard treatment can require nearly five weeks of daily radiation treatments after a specialized procedure available only in Omaha.

Because so many people in our state have to travel for treatment, our researchers are leading a clinical trial to answer the question: Can patients achieve the same results in a fraction of the time?

A Trial With Rural Nebraska in Mind

"Most patients get an average of 28 external beam radiation treatments, which use high-powered focused X-rays to damage the cancer cells," explains Michael Baine, MD, PhD, associate professor and executive vice chair and medical director for the Department of Radiation Oncology.

For men with more aggressive prostate cancer, high-dose-rate brachytherapy is a highly effective option. The Fred & Pamela Buffett Cancer Center is the only center in Nebraska and Iowa to offer brachytherapy, which precisely targets the prostate with high-dose radiation while minimizing damage to healthy tissue.

But for patients whose cancer may have spread beyond the prostate, brachytherapy alone isn't enough. They still need about 23 additional external beam radiation treatments over four and a half to five weeks.

For many Nebraskans, especially those in our outlying rural communities, that schedule can be difficult or even impossible to manage.

Evolving a New Standard of Care

Dr. Baine wants to see if the radiation treatment can be reduced to just five treatments. "It would be done over about a week and a half with a day off in between each treatment, making this a lot more accessible to patients," he says.

The shortened treatment schedule may also do more than reduce travel. Laboratory research has shown that higher doses over fewer treatments may actually improve how radiation targets prostate cancer while reducing side effects, according to Dr. Baine.

Early results are encouraging, and a similar Canadian study has shown that the five-treatment approach cut cancer recurrence and persistent side effects roughly in half compared with the traditional schedule.

Dr. Baine's trial, which enrolled its final participant this year, was inspired by a challenge common in our region: how to deliver the best possible cancer care without requiring weeks away from home. But if the results continue to be positive, this could become the new standard of care for prostate cancer patients everywhere.





Comforts of Home



Kathy Folk was the first patient to receive outpatient CAR T-cell therapy at the Fred & Pamela Buffett Cancer Center.

It was Friday the 13th in April 2012 when Kathy Folk received the news: She had non-Hodgkin follicular lymphoma. But the diagnosis came with some reassurance. A leading expert in treating this cancer was in Omaha at the Fred & Pamela Buffett Cancer Center.

Since then, Folk's cancer has returned six times. She has worked with several doctors, undergone multiple treatments and participated in clinical trials. In 2025, she became the Fred & Pamela Buffett Cancer Center's first outpatient CAR T-cell therapy patient. The milestone reflects years of advances in patient monitoring, toxicity management and cellular therapy expertise that now allow some patients to safely recover outside the hospital.

Recovery at Home

Chimeric antigen receptor T-cell therapy uses a patient's immune system to fight cancer. T cells are collected from the blood and reprogrammed to target cancer cells. The engineered CAR T cells are then infused into the patient. Historically, patients remained in the hospital for up to four weeks after the infusion for monitoring.

"But with daily monitoring, patients can now stay at home in their bed or at a hotel close by," explains Matthew Lunning, DO, FACP, interim chief of hematology and medical director of gene and cellular therapy. "The patient may come back to the hospital each day, or it could be a phone call or Zoom where we can see the patient and speak to the caregiver."

For outpatient therapy, a caregiver must be available around the clock to watch for fever, which can signal an infection or treatment-related toxicity. For eligible patients, outpatient treatment can reduce time spent in the hospital while allowing them to remain closer to family and familiar surroundings during recovery.

The monitoring period was historically about 28 days, but for many patients, it can now be as short as two weeks.

"What we've learned over time is that the vast majority of the events are going to happen within the first 14 days," Dr. Lunning says. "If they do happen, then we reset the time frame. But if it doesn't happen, then we are trying very hard to get the patient back to their own bed, to their own community and to their community oncologist."

Folk was a strong candidate for the first outpatient treatment because she had support from her husband and son at home.

"As much as I love the Fred & Pamela Buffett Cancer Center, I liked my bed and my shower better," she says.

A Foundation of Innovation

The Fred & Pamela Buffett Cancer Center/University of Nebraska Medical

"We are trying very hard to get the patient back to their own bed, to their own community and to their community oncologist." **–MATTHEW LUNNING, DO, FACP**

Center's leadership in cellular therapy traces back more than four decades to the work of James Armitage, MD, whose vision helped establish Nebraska as a leader in blood cancer treatment.

Under Dr. Armitage's leadership, the institution performed its first bone marrow transplant in 1983, making it one of the nation's early adopters of this lifesaving therapy. He was instrumental in advancing stem cell transplantation programs and helped drive the development and adoption of apheresis technologies that are now essential for collecting the cells used in transplants and modern cellular therapies, including CAR T-cell treatment.

"When CAR T-cell therapy became available, we already had the infrastructure and leadership in place," Dr. Lunning says. "We were primed to pivot quickly because CAR T-cell therapy is an iteration of cellular therapy under the broader umbrella of gene and cellular therapies."

The expertise, clinical programs and culture of innovation established by Dr. Armitage and his colleagues created the foundation for today's cellular therapy enterprise. From early bone marrow transplants to first-in-human CAR T-cell clinical trials, the Fred & Pamela Buffett Cancer Center has continued to build on that legacy, translating scientific advances into new treatment options for patients with blood cancers.

Cellular therapies that are now considered standard care first reached patients through clinical trials. The cancer center's CAR T-cell program began with first-in-human Phase I studies, helping move promising therapies from experimental approaches to FDA-approved treatments for certain blood cancers.

Dr. Lunning hopes more patients will eventually receive treatment closer to home and on an outpatient basis. That includes expanding CAR T-cell therapy to Kearney.

"As a trailblazer in the state of Nebraska and to serve the cancer patients of Nebraska, it's only prudent that we try to move beyond Omaha," Dr. Lunning says. "Patients and caregivers can't all move to Omaha for a month. So, we're trying to build a program that brings some of this technology to the west once the infrastructure is in place."

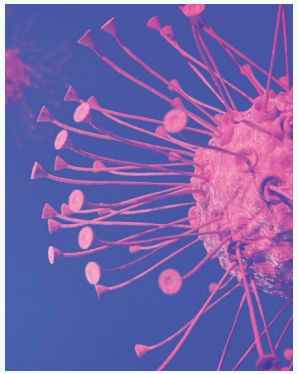
'I'm Still Here'

Folk, who worked in the Athletics and Activities Department at Millard North High School, recently retired and completed what she hopes will be her final cancer treatment. She and her husband have delayed their retirement plans, but they look forward to traveling and spending time with family.

"I would recommend the Fred & Pamela Buffett Cancer Center to anybody with any type of cancer because there are so many clinical trials that you can be a part of," she says. "And the doctors are all phenomenal."

Although her cancer has been persistent, Folk remains grateful for the care she has received. Her journey has spanned multiple generations of cancer treatment, from established therapies to clinical trials and, most recently, outpatient CAR T-cell therapy, advances made possible by decades of research and innovation.

"Without the Fred & Pamela Buffett Cancer Center and the great doctors and scientists who have developed all kinds of treatments, I wouldn't have gotten to see my now five grandchildren," she says. "I'm very lucky because I'm still here."



What CAR T Cells Target

CAR T-cell therapies recognize specific proteins on cancer cells. Commercially available therapies currently target:

CD19

Found on many lymphoma and leukemia cells

BCMA

B-cell maturation antigen, found on multiple myeloma cells

Bringing Tomorrow's Treatments to Nebraska

The Fred & Pamela Buffett Cancer Center's expanding Phase I clinical trials program gives Nebraskans access to promising new therapies.



For patients facing advanced or recurrent cancer, access to a promising new treatment can make a meaningful difference. Through an expanding Phase I clinical trials program, the Fred & Pamela Buffett Cancer Center is giving more Nebraskans the opportunity to receive innovative therapies years before they become widely available.



Through Phase I clinical research, the Fred & Pamela Buffett Cancer Center provides Nebraskans access to the latest cancer therapies. **–KATHLEEN MOORE, MD, MS, FASCO**

Why Phase I Trials Matter

For patients with recurrent cancer or advanced disease, Phase I clinical trials can offer hope.

"The benefit of having access to Phase I clinical research at a cancer center is that it allows us to bring very cutting-edge therapies to patients to help them feel better and ideally live longer," says Kathleen Moore, MD, MS, FASCO, deputy director and director of Phase I oncology trials at the Fred & Pamela Buffett Cancer Center.

Historically, Phase I trials focused primarily on safety rather than effectiveness.

"But that is just not how medications are developed in the modern era," Dr. Moore explains. "They are developed for a particular mutation, for a particular protein overexpression, for a particular clinical scenario. In an era of targeted therapy, we frequently see efficacy at very low dose levels of medication."

Phase I studies still aim to ensure a treatment is safe and determine the optimal dose and schedule, but researchers also need to see signs that it works.

"If there's no efficacy signal, these drugs aren't moving forward," she adds. "The reason we're opening studies here in our new Phase I Clinical Trials Unit is that we think having access to these drugs will help our patients."

Expanding Our Legacy

Building a nationally competitive Phase I program requires more than opening new studies. It depends on specialized staff, dedicated facilities, advanced technology and streamlined pathways that connect patients with opportunities quickly.

The Fred & Pamela Buffett Cancer Center has conducted Phase I clinical research for many years, primarily in blood cancers such as lymphoma and leukemia, along with a limited number of solid tumor trials. Under Dr. Moore's leadership, the center is expanding its Phase I program through:

Expanding expert teams. Additional clinical and research professionals will support growth while maintaining exceptional patient care.

Expanded services. A new Phase I Clinical Trials center will serve patients participating in early-phase trials, while expanded laboratory and pharmacy services will support the Phase I unit.

Greater access to sponsored trials. In addition to investigator-initiated trials designed by cancer center researchers, the team is increasing access to novel medications through studies sponsored by pharmaceutical companies and, eventually, the National Cancer Institute.

Easier ways to find clinical trials. A new website, expanded patient education and a streamlined screening process will help doctors and patients learn about available studies.

Faster patient matching. A new artificial intelligence-based screening tool is being developed to help identify potentially eligible patients more efficiently, reducing missed opportunities and accelerating access to clinical trials.

What's Next

The Phase I unit will also move into a dedicated space in late 2027, increasing its capacity to enroll patients and participate in more trials.

"We're providing access to new medications right here in Omaha and providing an incredibly high level of care," Dr. Moore says. "It's an exciting opportunity in Nebraska."

Innovation Spotlight

Through Phase I clinical trials, the Fred & Pamela Buffett Cancer Center is expanding access to innovative therapies that fight cancer in different ways.

- **Targeting cancer cell division.** New therapies targeting proteins such as KIF18A and cyclin E/CDK2 are designed to stop cancer cells from growing and dividing.
- **Putting the immune system to work.** Targeted therapies using bispecific antibodies, including NTB-928 and CT-95, are designed to direct the body's immune system to attack cancer cells in ovarian, pancreatic, colorectal and other advanced cancers.
- **Combining therapies for targeted treatment.** Antibody-drug conjugates pair targeted antibodies with cancer-fighting drugs to deliver treatment more directly to cancer cells while limiting exposure to healthy tissue.



Finding Hope Through Research

How a second opinion and a clinical trial changed Dr. Donna Polk's life.

Donna Polk, PhD, had not had a mammogram in 10 years. As CEO of the Nebraska Urban Indian Health Coalition, she knew the screening guidelines.

"With my basic knowledge of health, you'd think I would've stayed on top of my screenings, but I didn't," she says. "I didn't want bad news. When I finally had a mammogram, they found a lump."

The physician she first saw recommended a double mastectomy, an option Dr. Polk did not want. A friend suggested she seek a second opinion from Ken Cowan, MD, PhD, then director of the Fred & Pamela Buffett Cancer Center. That recommendation changed her life.

A Clinical Trial Offers Hope

Two months after her diagnosis, in August 2013, Dr. Polk met with Dr. Cowan. He was preparing to launch a breast cancer clinical trial, and she immediately asked to participate.

"He said, 'You don't even know what it's about,'" Dr. Polk recalls. "I said, 'I don't care. I just want to live.'"

Participating in the study allowed Dr. Polk to undergo breast-conserving surgery (lumpectomy) in early 2014. She remained in the clinical trial for 10 years and credits Dr. Cowan with not only changing her treatment plan but also transforming her outlook on the future. Through his leadership, the Fred & Pamela Buffett Cancer Center expanded access to innovative clinical research, giving patients like Dr. Polk options that were not widely available elsewhere.

"I just adored him," she says. "He was so wonderful. He took me from thinking I would probably die from breast cancer to where I am today."

Dr. Polk later spoke at Dr. Cowan's memorial service and shared one of her favorite memories.

"He gave me his cellphone number," she says with a laugh. "Then I found out everybody in Nebraska had his cellphone number. As busy as he was, he gave it to everyone."

> "Whatever I can do to get the word out, I'll gladly do it because the Fred & Pamela Buffett Cancer Center saved my life." —DONNA POLK, PHD

An Advocate for Others

Now 83, Dr. Polk retired in January 2025, but her advocacy continues. She encourages everyone to stay current on recommended cancer screenings and advises patients to bring someone with them to appointments to take notes, ask questions and help process difficult conversations.

Grateful for the care that changed the course of her life, Dr. Polk remains deeply engaged with the Fred & Pamela Buffett Cancer Center. She serves on its Community Advisory Board and was a member of the 31-person search committee that selected Joann Sweasy, PhD, as the Cancer Center's director, helping shape its future while giving back to the institution that guided her through cancer.

"We are very lucky to have an NCI-designated cancer center here in Omaha," Dr. Polk says. "Whatever I can do to get the word out, I'll gladly do it because the Fred & Pamela Buffett Cancer Center saved my life."

Could a Clinical Trial Be Right for You?

For Dr. Polk, a clinical trial opened the door to a treatment approach she might not otherwise have had. Clinical trials can offer eligible patients access to promising new therapies before they are widely available. Ask your doctor whether a clinical trial could be right for you.

Next Generation Cancer Prevention

Reducing cancer's impact begins long before diagnosis.
Next generation cancer prevention brings together researchers from across the Fred & Pamela Buffett Cancer Center to better understand cancer risk, improve early detection and develop prevention strategies tailored to the people and communities they serve. While this strategic initiative is still growing, it is already building the collaborations, research programs and scientific foundation needed to improve cancer outcomes across Nebraska and beyond.



BUILDING THE FOUNDATION

39
Full faculty members bringing together experts from across seven colleges and three campuses to advance cancer prevention research

165
Graduate students, fellows and early-career scientists training to advance tomorrow's cancer discoveries

ADVANCING PREVENTION RESEARCH

45
Research studies focused on primary, secondary and tertiary prevention

475
Cancer-relevant publications between 2021-2025 in prevention and population health research

5.8K+
Accruals in prevention-focused research studies over the past five years

WHY THIS WORK MATTERS

Cancer prevention has the potential to reduce the burden of cancer long before treatment is needed. By better understanding cancer risk, improving early detection and developing more effective ways to help people adopt and sustain healthier behaviors, researchers can prevent some cancers from developing, identify others sooner and improve outcomes for people and communities across Nebraska and beyond.

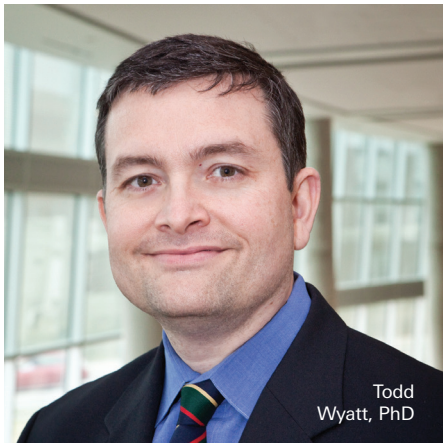
LOOKING AHEAD

As this strategic initiative continues to grow, researchers are expanding collaborations across disciplines and communities to better understand cancer risk, improve screening and prevention strategies, and ensure advances in cancer prevention reach the people who need them most.





Karuna Rasineni, PhD



Todd Wyatt, PhD

Connecting the Dots

Nebraska researchers are studying how alcohol interacts with smoking, nutrition and obesity to influence cancer.

Nebraska consistently ranks among the states with the highest rates of binge drinking, making alcohol misuse a significant public health concern, particularly in rural communities.

"Everywhere on the planet where anyone has done a comparative study to answer the simple question, 'Who drinks more, city people or country people?' has shown that people living in rural areas misuse alcohol more than their urban counterparts," says Todd Wyatt, PhD, co-director of the Alcohol Center of Research-Nebraska at the University of Nebraska Medical Center.

Alcohol has far-reaching effects on health, including increased cancer risk. Through the Alcohol Center of Research-Nebraska (ACORN), researchers across the university are studying how alcohol interacts with other exposures and health risks to contribute to disease. Their work is based on the idea that health outcomes seldom result from a single risk factor. Instead, researchers are examining how multiple exposures work together over a lifetime to affect disease risk.

The Alcohol Exposome

Dr. Wyatt sees alcohol research as especially well suited to collaboration because disease risk rarely comes from a single source. As a pulmonologist, he has long studied the effects of smoking on cancer risk.

"Very few people have been interested in peeling the onion and looking at polysubstance use," he says. "And yet we know that polysubstance use is replete. Some studies suggest as many as 95% of people with an alcohol use disorder are also cigarette smokers."

That overlap is central to ACORN's focus on the alcohol exposome.

"The exposome is the collective exposures that we all encounter — either specific to us or general to us all — and

"Studying the multiple environmental exposures of the exposome is key to understanding cancer and other diseases." —TODD WYATT, PHD

how those interplay internally to affect our health," Dr. Wyatt says.

Researchers study not only alcohol but also how it interacts with environmental exposures, tobacco use, age, nutrition and obesity to influence health.

The Obesity Connection

Studying alcohol alongside other risk factors can reveal important connections.

Karuna Rasineni, PhD, associate professor in the Department of Biochemistry and Molecular Biology, studies how chronic alcohol use disrupts hormonal regulation and can contribute to hepatic steatosis, or fat accumulation in the liver, which can lead to inflammation and disease.

She is also examining how alcohol and a high-fat diet may work together to affect the liver and hormones.

"I've found that chronic alcohol consumption causes an increase in the hormone ghrelin. Ghrelin has multiple functions in the body, including increasing appetite," Dr. Rasineni says.

Increased appetite can contribute to weight gain and obesity, an established cancer risk factor. By understanding how alcohol contributes to obesity and other metabolic changes, researchers hope to identify new ways to reduce risks associated with several types of cancer. Researchers have also found links between elevated ghrelin and alcohol use disorder. Understanding how these factors interact may help identify new approaches to treatment.

"A couple of years ago, we were getting early data on the weight-loss drugs GLP-1s, and some early data was suggesting that the people on GLP-1 agonists who also had alcohol use disorder were drinking significantly less once they'd started on the GLP-1s," Dr. Wyatt says. "It wasn't complete cessation, but everyone was consuming less alcohol because the craving for alcohol in those who were addicted was clearly decreasing."

These connections among organs, hormones, behaviors and disease help explain ACORN's emphasis on the exposome.

"We have leveraged all of the different alcohol researchers and the different organ systems that they've been interested in into a comprehensive multi-organ center that's focused on understanding alcohol misuse," Dr. Wyatt says. "Studying the multiple environmental exposures of the exposome is key to understanding cancer and other diseases."

ACORN Grant-Funded Projects

1 **The Exposome and Lung Bacterial Infection: Role of Liver and Gut-Derived Extracellular Vesicles**

FOCUS: Examining how alcohol and other exposures affect communication between the gut, liver and lungs and may influence the body's response to bacterial lung infections.

2 **Alcohol Promotes Hepatitis B Progression by Impairment of Innate Immunity in Liver Cells**

FOCUS: Examining how alcohol may weaken the liver's immune defenses against hepatitis B, allowing the infection to persist and cause greater liver damage.

3 **The Role of TP-R on Obesity and/or Alcohol-Induced Multi-Organ Damage: Liver and Heart**

FOCUS: Determining how alcohol and a high-fat diet may work together to damage the liver and heart, and the role TP-R, a receptor protein, may play in that process.

4 **Development and Progression of Alcohol-Associated Liver Disease: Effect of Aging**

FOCUS: Examining how aging may make the liver more vulnerable to damage from alcohol and worsen alcohol-associated liver disease.

1 in 5 About one-fifth of Nebraskans reported binge drinking in the past 30 days, placing Nebraska among the five states with the highest rates of binge drinking. By understanding how alcohol interacts with other exposures throughout the body, ACORN researchers hope to uncover new strategies to prevent cancer and improve health outcomes for people across Nebraska.

Growing Tomorrow's Cancer Workforce

From middle school through medical school, educational and research programs are inspiring the next generation of cancer researchers, doctors and health care professionals in Nebraska.

Developing the next generation of cancer researchers, clinicians and health professionals is essential to advancing cancer prevention, discovery and patient care across Nebraska. By introducing young people to cancer science early, then giving them opportunities to build skills through hands-on research and mentorship, the University of Nebraska Medical Center and Fred & Pamela Buffett Cancer Center are helping develop the workforce Nebraska will need for the future of cancer care.

Starting Young

Programs for middle and high school students combine hands-on cancer science with career exploration to spark curiosity and encourage interest in biomedical and health-related careers.

Youth Enjoy Science for Middle Schoolers

Funded by the National Cancer Institute, the Youth Enjoy Science (YES) program offers hands-on cancer education and research experiences designed to build awareness of cancer risk factors and encourage interest in biomedical and health-related careers.

During the school year, middle school students explore potentially cancer-causing pollutants in local air, water and soil, with topics rotating over time. They also learn the research process by developing a hypothesis, conducting experiments and drawing conclusions.

When studying air quality, for example, students learn about radon, consider factors such as the age of their homes and test radon levels. If elevated radon levels are identified, families are connected with resources to support testing, mitigation and education about cancer prevention. When studying water, students test Nebraska rivers for potential pollutants and learn how environmental exposures can affect cancer risk.





YES program students testing Nebraska river water for pollutants.

Middle school students can also explore cancer research and related careers through the YES Science, Technology, Engineering, Art and Mathematics Camp. Students learn what cancer is, how it can be prevented and how researchers are working to improve outcomes. They then use storytelling, art and technology to create educational materials that share what they have learned.

100%

of survey respondents said they learned more about cancer through the STEAM Camp.

High School Alliance

The yearlong UNMC High School Alliance gives juniors and seniors opportunities to take courses not typically available in a traditional high school setting. Students explore subjects such as cancer, biomedical research and medical decision-making.

Students observe and shadow health professionals, take college-level courses taught by clinical faculty and conduct hands-on laboratory research, including designing their own projects. Previous students have studied drug therapies, public health, communications and other topics.

The afternoon courses are accredited and overseen by a certified high school teacher and replace part of the students' traditional high school coursework. The program provides an early pathway into biomedical research and health professions, including fields relevant to cancer research and patient care.

YES Weeklong Institute for Students in High School

During this weeklong summer program, motivated high school students work directly with researchers, health professionals, educators and community leaders. Fred & Pamela Buffett Cancer Center Shared Resource directors introduce students to research facilities and the work conducted there.

Students also participate in simulation-based clinical learning at the Davis Global Center, using technology to deepen their understanding of human anatomy, physiology and medical equipment.

Some programming overlaps with the six-week Summer Health Professions Education Program, a free enrichment program sponsored by the Robert Wood Johnson Foundation for college students interested in health professions.

uBEATS Online Education

UNO & UNMC Building Excellence in Academics Through STEM, or uBEATS, offers interactive online modules covering cancer, genetics, microbiology and pathology, pharmacology, public health, behavioral health, medical terminology, academic success and health care careers. Designed for students in grades 6 through 12, the modules can supplement core science curricula.

Turning Interest Into Careers

Research experiences, mentorship and specialized training help college and medical students build skills and take the next step toward careers in cancer research and care.

Precision Care in Oncology and Hematology EMET

Precision Care in Oncology and Hematology is an Enhanced Medical Education Track available to students in the UNMC College of Medicine. The track provides focused training in oncology and hematology beyond the traditional medical school curriculum, preparing students for future careers in cancer care and research.

Students work closely with mentors and oncology faculty while learning about molecular and genetic markers associated with cancer, emerging treatments, clinical and research skills, and research evaluation.

A longitudinal research project also gives students experience with research ethics, protocol design, study implementation, data collection and analysis, report development and administrative considerations.

Summer Undergraduate Research Program

Through UNMC's 10-week Summer Undergraduate Research Program (SURP), students join research teams and apply and expand their scientific knowledge and skills. Since 2021, approximately 200 students have gained hands-on cancer research experience through SURP.

Nebraska IDeA Networks of Biomedical Research Excellence

The Nebraska IDeA Networks of Biomedical Research Excellence (NE-INBRE) program supports undergraduate research at institutions across Nebraska, strengthening biomedical research and training statewide. Fred & Pamela Buffett Cancer Center faculty help lead the National Institutes of Health-supported program, which includes cancer biology as one of its research areas.

Faculty and students at participating institutions receive support to develop research projects, including faculty salaries, student stipends, equipment, supplies and travel. The program helps build research capacity on undergraduate campuses while expanding opportunities for students to gain hands-on research experience. By supporting undergraduate research opportunities across Nebraska, NE-INBRE strengthens the state's biomedical workforce pipeline and expands access to research training opportunities.



"This program has provided me with valuable exposure to the Hematology and Oncology department at UNMC, allowing me to gain a deeper understanding of the field and its potential career opportunities. Through this experience, I have been able to work with and learn from a variety of physicians, which has allowed me to build meaningful professional relationships and mentorships. Additionally, the program has given me access to both laboratory and clinical research opportunities, allowing me to grow in my research capabilities and skills and develop my own project."
–Brock Lakin, UNMC Precision Care in Oncology and Hematology Enhanced Medical Education Track



"Through this experience, I gained insight into the realities of research: the joy of discovery, the importance of meticulousness and the value of teamwork in achieving scientific goals. Furthermore, working alongside driven, supportive women from different cultural backgrounds in our lab was inspiring and empowering. I learned not only the foundations of scientific research but also who I want to be as a leader, a patient advocate and a future physician."
–Anastasia Bernal, Summer Undergraduate Research Program, 2022, Research Technician I, 2023-2024, current UNMC medical student

Supporting the Next Generation

Principal investigators of National Institutes of Health grants that help support cancer education and research opportunities for young trainees at the Fred & Pamela Buffett Cancer Center:

- SEPA grant: Maurice Godfrey, PhD, and Liliana Bronner, PhD, MHSA, MBA
- YES grant: Regina Idoate, PhD, Maurice Godfrey, PhD, Joyce Solheim, PhD, and Aislinn Rookwood, PhD, MPH
- NE-INBRE grant: Paul Sorgen, PhD

50% of SURP participants pursue graduate school or health professions

50% go directly into science careers

73% of NE-INBRE undergraduate participants pursue graduate school or health professions

27% go directly into science careers

When HPV Lingers

Research into the immune and biological factors behind persistent HPV infections could improve cancer risk assessment, screening and early detection.



For most people who contract human papillomavirus, or HPV, the body clears the infection on its own, often without symptoms. But when HPV persists, it can lead to long-term changes that may eventually cause cancer, making it an important focus of prevention research.

"For those people who cannot clear the infection, it lasts for a really long time," says Brittney Dickey, PhD, MPH, assistant professor in the Department of Epidemiology at the UNMC College of Public Health and a member of the Fred & Pamela Buffett Cancer Center. "It stays around, and it starts to create long-term changes, eventually causing cancer at those sites."

HPV is one of several cancer-causing viruses. Dr. Dickey studies why some infections persist and how that knowledge could lead to better ways to assess cancer risk and improve screening.

Why Some HPV Infections Persist

"HPV persistence is the precursor to cancer," Dr. Dickey says. "We know that it must persist for many years before it causes cancer."

Her research seeks to identify biological and behavioral factors associated with HPV persistence, with particular focus on the immune system. She is especially interested in whether a person's immune profile can help reveal cancer risk and improve prevention strategies.

Supported by a highly competitive National Institutes of Health Director's Pioneer Award providing $350,000 per year for five years, Dr. Dickey is investigating the immune mechanisms that influence progression from persistent HPV infection to cancer in people living with HIV.

Using innovative immune profiling and DNA methylation analysis, Dr. Dickey is studying 3,000 people with and without HIV to better understand why cancer-causing viral infections such as oral HPV persist in some people — and what those differences could reveal about cancer risk and screening.

"We can learn about how to effectively screen people with HIV, but also we can just learn something about the immune system in general that can be applied across any population," she says.

The Challenge of Oral HPV

Dr. Dickey hopes this deeper understanding will lead to better prevention and screening. With cervical HPV, precancerous lesions can be identified and removed before they develop into cancer. Oral HPV presents a different challenge.

"There's no precancer lesion that I can remove in the oral cavity," she says. "My goal is to work toward early detection of oropharyngeal cancer because we know if we detect it early, treatment is much simpler than if it's detected late."

Making Cervical Cancer Screening Easier

With a pilot award from the Fred & Pamela Buffett Cancer Center, Dr. Dickey is also exploring self-collected HPV testing as one way to increase cervical cancer screening among women in rural Nebraska.

Long travel times, limited access, fear and anxiety can create barriers to screening. Dr. Dickey is surveying rural women about those challenges and their willingness to collect their own samples for HPV testing.

"This project is an attempt to eliminate some of that burden for the patient so they're still getting screened for cancer and preventing cancer, but we're making it a little less terrible," she says.

The Four P's of Prevention

The guiding principles shaping a new approach to cancer prevention across Nebraska.

Cancer prevention doesn't rely on a single solution. At the Fred & Pamela Buffett Cancer Center, it starts with four guiding principles: policy, persuasion, partnerships and presence.

The new Cancer Prevention and Control program is bringing together experts from across disciplines to explore how those four principles can help reduce cancer risk and improve health across Nebraska.


Thomas Sellers, PhD, MPH

Policy

Changing the environment around a decision can be as powerful as changing someone's mind. Tobacco control offers a clear example.

"What we've learned from declines in cigarette smoking is that what really works are policies, including taxes," says Thomas Sellers, PhD, MPH, deputy director of population science. "When you can't smoke indoors, for example, that creates inconvenience for people."

Cigarette taxes and other policies have helped reduce tobacco use, contributing to lower cancer mortality in the U.S.

Persuasion

Knowing what causes cancer does not always change behavior. Framing prevention messages differently may help.

Melanoma, a potentially deadly skin cancer, is caused primarily by ultraviolet radiation. Yet persuading people to wear sunscreen remains a challenge.

"Ninety-five percent of wrinkles are caused by ultraviolet radiation," Dr. Sellers says. "Anti-wrinkle creams are projected to be a $35 billion industry worldwide, so clearly people will buy products to prevent wrinkles."

Someone who wears sunscreen to prevent wrinkles is also reducing their risk of skin cancer. To Dr. Sellers, the reason for the behavior change matters less than the result.

Nebraska Extension has served communities across the state for more than 150 years and maintains a presence in every county.

Partnerships

Effective cancer prevention requires strategic communication. The Fred & Pamela Buffett Cancer Center has partnered with the University of Nebraska–Lincoln College of Journalism and Mass Communications, combining cancer expertise with communications and marketing research to better understand how prevention messages can reach and motivate different audiences.

Presence

The program also aims to reach Nebraskans through trusted community partners.

Nebraska Extension has served communities across the state for more than 150 years and maintains a presence in every county.

"They are a trusted, known entity, and we're already working with their existing infrastructure," Dr. Sellers says. "If they're out doing pesticide-applicator training, they are interjecting modules on cancer awareness, prevention and screening."



Kate Heelan, PhD, FACSM, leads a session of Building Healthy Families.

Building Healthy Families

What started as a solution to a local problem has grown into a national model for fighting childhood obesity.

Nearly 20 years ago, annual health screenings in Nebraska public schools revealed a troubling trend: Childhood obesity was on the rise. A local pediatrician saw an opportunity to help by creating a community resource for families raising a child with obesity.

About the Program

Researchers at the University of Nebraska at Kearney got to work. In 2009, they launched Building Healthy Families, a 12-week program that combines nutrition education, physical activity and behavior change for elementary school-age children and their parents.

Designed specifically for rural and low-resource communities, the program addresses barriers such as limited access to dietitians and higher rates of food insecurity.

The need is significant. Among children ages 10 to 17, 38% in rural communities are overweight or obese, compared with 30% in urban areas.

"Nearly 96% of Nebraska lacks access to pediatric weight-management resources," says Kate Heelan, PhD, FACSM, research professor in the University of Nebraska Medical Center College of Allied Health. "Families would have to travel to Omaha, Kansas City or Denver. We wanted to put something directly into communities that could help."

Building Healthy Families focuses on practical skills families can use every day. Sessions are interactive, with parents and children learning side by side, an approach that has become one of the program's greatest strengths. Participants consistently say the shared experience is one of the program's most valuable benefits.

Expanding Our Reach

The program has delivered measurable results. Children with obesity reduced their body mass by about 4% during the program, while participating adults averaged a 7% reduction.

Those outcomes helped secure funding through the Centers for Disease Control and Prevention's Child Obesity Research Demonstration project. The Fred & Pamela Buffett Cancer Center was one of five institutions selected to help communities across the country implement Building Healthy Families.

The implementation toolkit includes online training, educational materials, recruitment resources, data-tracking tools and equipment for physical activity sessions. In 2019, the team piloted the program in eight Nebraska communities and successfully adapted it through the challenges of the COVID-19 pandemic while preserving its in-person approach.

Today, Building Healthy Families is recognized by the CDC and the American Academy of Pediatrics as one of six evidence-based community programs for childhood obesity. With support from a recent National Institutes of Health grant, the program is expanding to rural communities nationwide. Building Healthy Families currently serves eight communities, with six more preparing to launch. Over the next five years, the grant will support implementation in 30 communities.

Boots, Buckles and Giving Back

The annual Cattlemen's Ball celebrates Nebraska's ranching traditions while raising millions for cancer research.



Hard work, generosity and a proud ranching tradition are hallmarks of Nebraska. At this year's Cattlemen's Ball, all three were on full display.

Produced by hundreds of volunteers whose lives have been touched by cancer, the Cattlemen's Ball has become one of the state's premier fundraising and social events. Ninety percent of the proceeds support cancer research at the Fred & Pamela Buffett Cancer Center, while the remaining 10% supports health and wellness programs in the host community. The 2026 event, held near Cozad, raised $1.5 million.

A Nebraska Tradition

Since the first Cattlemen's Ball in 1998, the event has raised more than $21 million for cancer research. Held in a different location each year, the ball also gives rural communities an opportunity to showcase the people, traditions and character that make their region unique. The 2027 event will be held near Stromsburg.

The two-day celebration featured premium Nebraska beef, local craft beer, live music and a full schedule of activities, including auctions, a survivor style show, a rope-and-drag demonstration and a draft horse haying demonstration.

Fueling Cancer Research

Funds raised through the event have supported pilot research projects, clinical trials and specialized research equipment. Over the past



Held in a different location each year, the ball gives rural communities an opportunity to showcase the people, traditions and character that make their region unique.

decade, $9.6 million has been invested in 123 pilot projects, helping researchers generate preliminary findings that led to approximately $100 million in external grant funding.

The Cattlemen's Ball has also been selected to receive the Association of American Cancer Institutes' 2026 Champion for Cures Award. The honor recognizes individuals and organizations whose generosity and leadership advance cancer research and care, inspire others and create lasting change. The award will be presented in October 2026 at the AACI/CCAF Annual Meeting in Chicago.

"These volunteers are people who have been impacted by cancer. They're mission-driven," says Joann Sweasy, PhD, director of the Fred & Pamela Buffett Cancer Center. "They want to make a difference in the fight against cancer, and they believe that researchers like us can make a difference."



Community Outreach at the Cattlemen's Ball

The Cattlemen's Ball creates opportunities to improve health in the host community, as well as raise money for research. The Fred & Pamela Buffett Cancer Center works with local health systems and clinics to offer a health and wellness tent featuring cancer screenings, preventive services and information about research supported by the event.

At the 2026 Cattlemen's Ball, the team welcomed more than 800 visitors to the health and wellness tent, many of whom were screened for colorectal and prostate cancers and referred for lung and breast cancer screening. For the first time, the team also offered multicancer early detection blood tests, which generated significant interest among attendees.

CATTLEMEN'S BALL BY THE NUMBERS

1998
First Cattlemen's Ball held

822
Attendees who visited the health and wellness booth in 2026

$1.5 MILLION
Raised in 2026

$21 MILLION
Raised for cancer research since 1998

$100 MILLION
Secured in external research funding with support from Cattlemen's Ball-funded pilot projects



A Gift Rooted in Gratitude

Inspired by his family's experience with cancer, Allen Fredrickson is helping advance breast cancer research that can change the future of breast cancer care.

In 1988, Allen and Marilee Fredrickson moved to Omaha with their two young children. Just a year later, at age 29, Marilee was diagnosed with breast cancer. The care she received at what is now the Fred & Pamela Buffett Cancer Center helped save her life not once but twice, giving her decades more time with the people she loved.

Today, Allen is helping create that same opportunity for other families. Through a generous gift, he established the Fredrickson Breast Cancer Research Fund to advance innovative treatments and research.

Marilee's Story

From the family's first experience at the Fred & Pamela Buffett Cancer Center, then the Eppley Cancer Center, they were impressed.

"We were fortunate for what we felt was really uncommon and high-quality care that happened to be in our own backyard," Allen says.

Marilee was treated with radiation and chemotherapy. Four years later, the cancer returned. This time, Allen says, it was more concerning. She underwent what was then a relatively new treatment — a bone marrow, or stem cell, transplant.

Allen says Marilee was diligent about managing her health and motivated by a desire to be there for their children, Ashley and John. Cancer returned when she was in her 60s, and she died after a third bout with the disease in 2022.

Their mother's experience has shaped how Ashley and John approach their health. Both have taken steps to better understand their cancer risk and reduce it through healthy living and recommended screenings.

On a Mission

For Allen, philanthropy is a way to honor Marilee's journey and help create better outcomes for future patients.

"Causes and missions are born from personal experience," he says. "Cancer has accompanied our family for a good number of years. And we don't feel like we would have had the success story that we've had, had it not been for the Fred & Pamela Buffett Cancer Center."





Allen's hope is simple: that more families will have the opportunity to celebrate milestones, make memories and enjoy more years together.

"I hope it can lead to more positive stories, more positive outcomes," he says. "We have a really high regard for the work that's being done there, for the people there and for the people who have been on this journey with us."

A Lasting Legacy

Allen is founder and executive chairman of Signature Performance, a health care administrative services and technology company serving federal and commercial markets. A father and grandfather, he is also active in the Omaha community.

He serves on the Aksarben Foundation Board of Governors and Greater Omaha Chamber Board of Directors, where he chairs the Health Care Council. A founding member of Nebraska Thrives, Allen also serves on the Lauritzen Gardens Board of Trustees, Nebraska Health Care Transformation Commission, University of Nebraska President's Advisory Committee on Excellence, and the Fred & Pamela Buffett Cancer Center Philanthropic Advisory Board.

When Marilee was first treated, Allen remembers seeing patients and families who had traveled from outside Omaha and even outside Nebraska for care.

"I thought, what a blessing to be able to have the proximity to a world-class place like this. And I want to keep this gem — the Fred & Pamela Buffett Cancer Center — healthy and surviving," he says. "I want to do whatever we can to continue to nurture and cultivate that."

Help Shape the Next Breakthrough

Every breakthrough begins with a commitment to what's possible. Philanthropic support helps researchers pursue bold ideas, expand access to innovative therapies and improve outcomes for patients and families facing cancer. Learn how you can make a difference at **unmc.edu/cancercenter**.

How the Fredrickson Fund Is Advancing Breast Cancer Research

The Fredrickson Breast Cancer Research Fund is supporting new approaches to cancer treatment and research. The fund has helped support the medical center's new proton beam therapy system, the first of its kind in Nebraska. The technology can treat multiple types of cancer and will also support research.

The fund is also helping make a breast cancer vaccine clinical trial possible.

Mary "Nora" Disis, MD, director of the Cancer Vaccine Institute at the University of Washington and a University of Nebraska Medical Center (UNMC) College of Medicine graduate, has been developing DNA-based cancer vaccines.

UNMC and the Fred & Pamela Buffett Cancer Center have partnered with Dr. Disis and the University of Washington to manufacture a vaccine for HER2-positive breast cancer. The DNA-based vaccine is designed to target cancer and recruit the immune system to attack it following initial therapy.

Manufacturing the vaccine requires a specialized biological production facility. The Fredrickson fund is helping make modifications to an existing space possible, and the clinical trial will be conducted at the Fred & Pamela Buffett Cancer Center.

Looking Ahead

Four initiatives that will define the next chapter of cancer care in Nebraska.



The future of cancer care depends on reaching more patients, accelerating discovery and ensuring that every community benefits from scientific progress.

As Nebraska's only National Cancer Institute–designated cancer center, we are investing in innovative approaches that will expand access to prevention, clinical trials and advanced treatments across the state. These four initiatives represent the next chapter in our mission to reduce the burden of cancer for all Nebraskans.

Building the Cancer Health Network

Our Community Outreach and Engagement team has established 155 partners, helping bring cancer education and events to Nebraskans. Now, we are working to connect those partners through a statewide Cancer Health Network that includes federally qualified health centers, critical access hospitals, primary care practices and Nebraska's 19 public health districts.

By strengthening connections among local providers, public health districts and community organizations, the network will help ensure that evidence-based cancer prevention and care reach Nebraskans regardless of where they live.

The network will help bring cancer prevention, screening and clinical research into communities across the state. It will also provide training for local care teams, help more patients participate in clinical trials and create new opportunities for researchers and community partners to work together. Community clinicians will be able to help identify local research needs and collaborate with Fred & Pamela Buffett Cancer Center teams to design studies that address them.

Our vision is to bring cancer screening directly to communities where access is limited, reducing travel burdens and helping more people receive recommended screenings close to home.

An executive committee has been formed, and work is underway to build the infrastructure needed to support the network.

Taking Cancer Screening on the Road

For many Nebraskans, especially those living in rural communities, cancer screening can require hours of travel. We are working to change that by bringing screening services directly to the communities that need them most.

Our vision is to bring cancer screening directly to communities where access is limited, reducing travel burdens and helping more people receive recommended screenings close to home. Mobile units will provide screening services, health education and connections to follow-up care when needed.

By bringing these services closer to home, we can help more Nebraskans detect cancer earlier, when treatment is often most effective.

Expanding the Translational Process

Every breakthrough begins with a discovery, but its true impact is realized only when it improves patient care. We are strengthening the connections among laboratory scientists, clinical researchers, physicians and communities to accelerate the path from discovery to treatment.

At the Fred & Pamela Buffett Cancer Center, a collaborative process brings together experts in basic, translational, clinical and population science to move promising discoveries more efficiently from the laboratory into patient care.

Community input is also essential. Through the Community Advisory Board, we can better understand the challenges that matter most, set research priorities more strategically and ensure our work responds to the needs of communities across Nebraska.

Bringing Proton Therapy to Nebraska

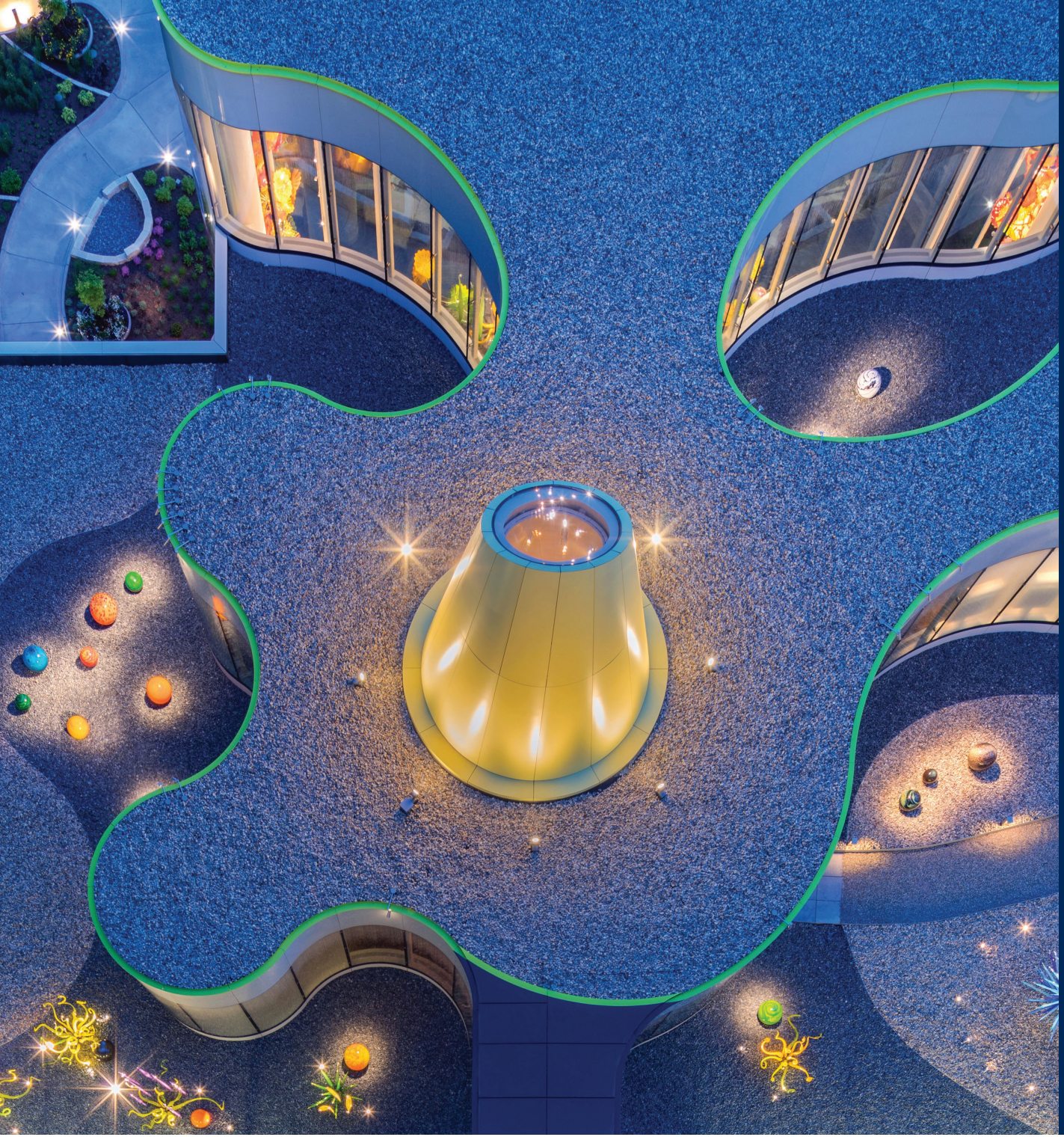
In 2027, the Fred & Pamela Buffett Cancer Center will become home to Nebraska's first proton therapy program, marking a major milestone in the state's cancer care capabilities with the installation of the Mevion S250-FIT proton therapy system.

Proton therapy offers a new treatment option for patients with complex or hard-to-treat cancers. The technology uses charged particles to deliver radiation that stops at the tumor site, helping limit radiation exposure to surrounding healthy tissue. For some patients, this may reduce side effects and support a better quality of life compared with traditional radiation therapy.

Until now, Nebraskans who needed proton therapy have had to travel long distances for treatment. Bringing this technology to Omaha will give patients across Nebraska and the Midwest greater access to advanced cancer care closer to home.

As cancer survival continues to improve, we are investing in treatments designed not only to save lives but also to support quality of life in the years that follow. Together, these initiatives reflect our commitment to advancing cancer prevention, research and treatment while ensuring that every Nebraskan has access to the highest quality care, close to home.





Elevate the Good Life, Free of Cancer

Nebraska Medicine

FRED & PAMELA BUFFETT
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