2023 Annual Report



Providence

Research Network

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Above: Thomas M. Duhen, PhD, Anti-Cancer Immune Response Laboratory, Earle A. Chiles Research Institute, a division of Providence Cancer Institute of Oregon

On the cover: Carlo Bifulco, MD, Chief Medical Officer, Providence Genomics; Member & Medical Director, Translational Molecular Pathology & Molecular Genomics, Earle A. Chiles Research Institute, a division of Providence Cancer Institute of Oregon

Welcome



Ari Robicsek, MD

A Letter from Ari Robicsek

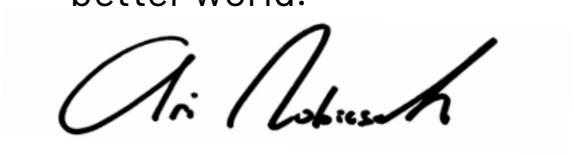
CHIEF ANALYTICS & RESEARCH OFFICER

Welcome to the Providence Research Network 2023 Annual Report. I'm honored to share some of the remarkable progress in research and care made at Providence last year.

There are great researchers at academic medical centers around the U.S., but Providence offers something special. As a community-based, mission-driven health system with a diverse seven-state footprint, we have a unique opportunity—and responsibility—to make a positive impact on the communities we serve. Our size and breadth of services ensure our research is grounded in real-world care and reflects the diverse experiences, contexts, and needs of all individuals. As a result, the evidence produced at Providence is richer, more nuanced, and more likely to lead to a better health system that works for everyone. Ultimately, that's what research is for—not only to study the world but to help change it.

Throughout 2023, our researchers, scientists, and caregivers worked to deliver on that promise. For example, a Providence researcher-led study is paving the way toward a potential breakthrough treatment for chronic kidney disease, which affects more than 35 million U.S. adults each year. We built evidence around new immunotherapies for treating some of the most pervasive and deadly cancers, moving us closer to the goal of finishing cancer. We continued exploring the intersections of artificial intelligence and health care and worked to make the promise of genetic medicine available to patients everywhere. Our caregivers brought cutting-edge clinical trials to communities historically underserved by research. Plus, Providence researchers made important contributions to the scientific literature, including publications in high-impact journals like the *New England Journal of Medicine*, *Nature Medicine*, and *The Lancet*.

Read on to learn more about these stories and the many ways that Providence researchers are shaping the health care system of the future. One where all patients and providers have the tools they need to realize our vision of health for a better world.



About the Providence Research Network

RESEARCH IS VITAL TO PROVIDENCE'S MISSION OF SERVICE, COMPASSION, AND HEALING. The Providence Research Network supports that mission with groundbreaking research and evidence-based innovation. Our world-class experts investigate a wide range of diseases and develop new prevention and treatment strategies, giving hope to some of our sickest patients and making our services more convenient and accessible.

In partnership with our patients and partners, the Providence Research Network's researchers, scientists, and caregivers are transforming health and health care for generations to come.

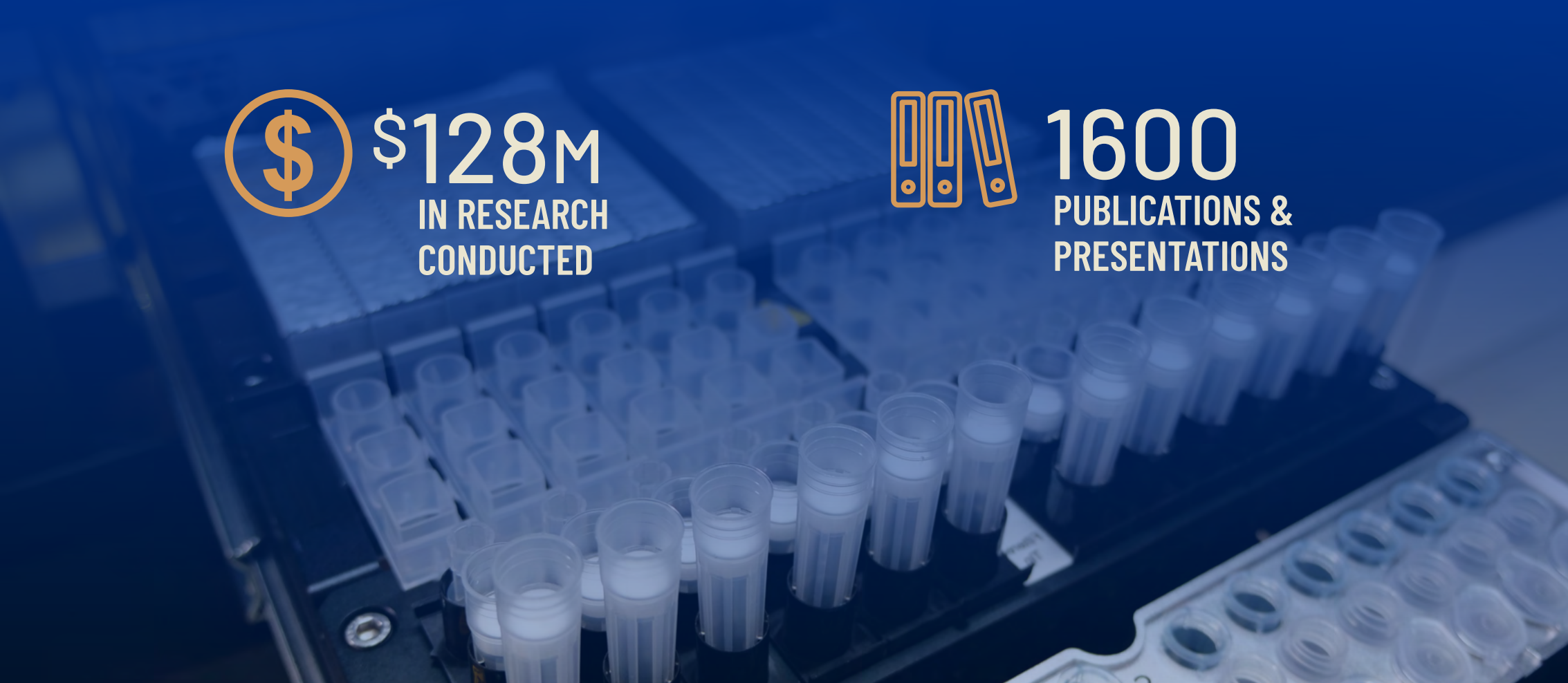
2023 by the Numbers

2894
PATIENTS NEWLY ENROLLED IN TRIALS

2402
ACTIVE STUDIES

$128M
IN RESEARCH CONDUCTED

1600
PUBLICATIONS & PRESENTATIONS



Why Providence?



At Providence, our size and scale allow us to examine the best new treatments and innovations in many settings and contexts. The ability to look across large populations and diverse geographies empowers our researchers to test real-world effectiveness; our commitment to engaging those historically excluded from research drives context-informed health care transformation.

Who we are

The Providence Research Network is a diverse community of researchers, scientists, and caregivers with a shared vision of health for a better world.

Together, we're producing evidence not just about what works, but **what works for whom** and **under what circumstances.**



THE PROVIDENCE RESEARCH HUB

The Hub is the home base for the Providence Research Network, consisting of three collaborative teams dedicated to supporting our research centers to advance research.

ORA
Office of Research Administration

Administrative & contracting services to support the "back end" of research.

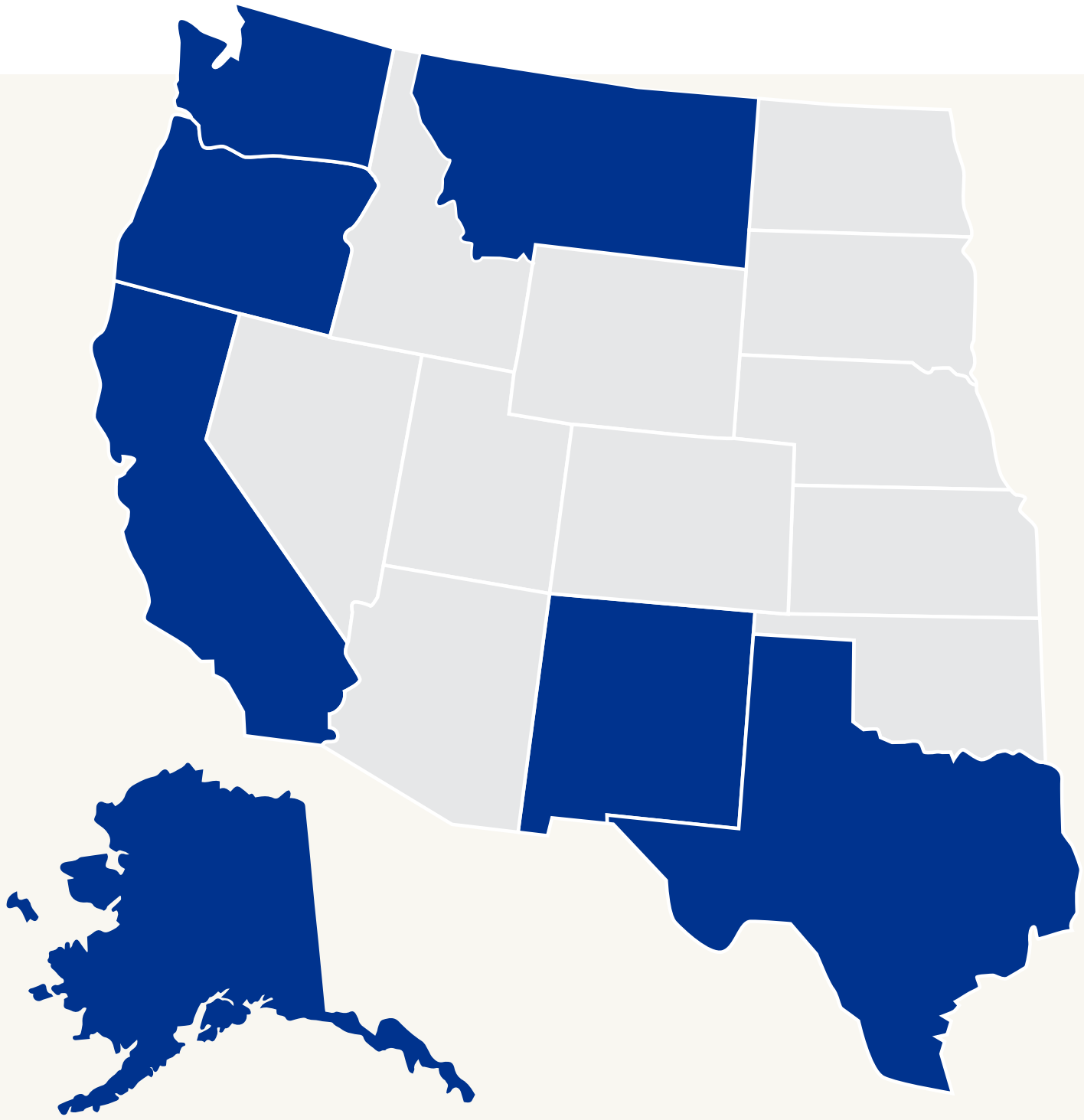
HRPP
Human Research Protection Program

IRB & compliance services to protect research participants.

HRA
Health Research Accelerator

Services, supports, & infrastructure for researchers. Advancing research that supports our strategy.

About the Providence Research Network



Our network includes more than 20 major research centers across seven states, plus hundreds of individual researchers who partner with the leading health science companies and academic centers to advance science.

Our partners: We partner with leading biotech and pharmaceutical companies and test our researchers' innovative ideas to make a positive impact on human health. Our 2023 research portfolio included 2402 active studies and clinical trials investigating both drug and device experimental treatments for disease.

Connect with us!

Stay connected with the Providence Research Network.

- VISIT OUR WEBSITE
- READ OUR RESEARCH BLOG
- EMAIL US



Pictured: Kristina Young, MD, PhD, Medical Director, Radiation Oncology, Earle A. Chiles Research Institute, a division of Providence Cancer Institute of Oregon

Our Impact

In 2023, our researchers and caregivers collaborated with patients and industry partners to pioneer game-changing approaches to preventing, detecting, and treating disease.

Learn about some of our vital work in the pages ahead. You can also dive deeper into many of these stories by clicking the links found throughout this report.

We're proud to continue leading the field in cancer and precision medicine, genomics, neuroscience, and heart and vascular care **WHILE PLACING OUR COMMITMENT TO A MORE RESPONSIVE AND EQUITABLE HEALTH SYSTEM AT THE CENTER OF ALL WE DO.**



Pictured: Rom S. Leidner, MD, and Eric Tran, PhD, Adoptive Cell Therapy Laboratory, Earle A. Chiles Research Institute, a division of Providence Cancer Institute of Oregon

Delivering Breakthroughs in Cancer Research & Care



In 2023, Providence researchers continued building on decades of work developing a new generation of cancer treatments and therapies, moving us closer to realizing our goal of finishing cancer. Our relentless pursuit of more targeted and effective treatments in areas like immunotherapy is saving lives today and offering hope for the patients of tomorrow.

Pictured: Mattias Bustos, PhD, Assistant Professor, and Satoru Furuhashi, PhD, Postdoctoral Research Fellow at the Translational Molecular Medicine team at Saint John's Cancer Institute

Providence Swedish First Hill



Fernanda B. P. Musa, MD



Joanie M. Hope, MD

Reshaping the standard of care for advanced or recurrent endometrial cancer

Health care providers and patients nationwide have a new standard of care for treating advanced or recurrent endometrial cancer, thanks in part to the work of gynecologic oncology researchers at Providence Swedish. A Phase III clinical trial involving 818 patients with advanced or recurrent uterine cancers found that the addition of pembrolizumab, a type of immunotherapy, to standard chemotherapy resulted in significantly longer progression-free survival than with chemotherapy alone. Findings were published in the prestigious *New England Journal of Medicine.*

Read more

> Clinical trials are a huge team-based effort starting with the patient volunteer who bravely agrees to help improve care for others. We are proud of our study coordinators, data managers, regulatory workers, nurses, and doctors who, together with many others, helped improve care for the thousands of women diagnosed with endometrial cancer every year.
>
> *Fernanda B. P. Musa, MD, Director of Clinical Research, Gynecology Oncology, Swedish Cancer Institute*



Rachel E. Sanborn, MD

Earle A. Chiles Research Institute, a division of Providence Cancer Institute of Oregon

A promising immunotherapy for non-small cell lung cancer (NSLC)

Multiple studies at Providence Cancer Institute of Oregon (PCI) are evaluating amivantamab, a new treatment for NSCLC. This novel bispecific antibody has shown promise as an effective agent in treating NSCLC, the most common type of lung cancer, in certain conditions. In 2023, Providence's Dr. Rachel Sanborn co-authored two papers about recent Phase I and III clinical trials in which PCI participated. The papers were published in the high-impact journals *Nature Medicine* and the *New England Journal of Medicine*.

Read more





Anton J. Bilchik, MD, PhD



Dave S.B. Hoon, PhD



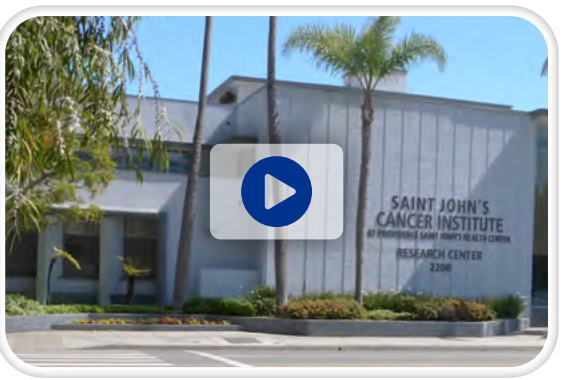
Matias A. Bustos, PhD

Saint John's Cancer Institute

Using cutting-edge technology to understand the clinical factors of early-onset colon cancer (EOCC)

The incidence of EOCC in adults under age 50 has increased rapidly worldwide, yet the causes of this increase remain unknown. A team of Providence researchers is studying the clinical factors that play a role in EOCC using cutting-edge digital spatial profiling technology to better understand these cancers' molecular mechanisms. Their findings, published in *NPJ Precision Oncology*, offer evidence that may lead to targeted strategies to manage EOCC and improved screening of aggressive EOCC tumors in young adults.

Read more



Watch the video to learn more about Saint John's Cancer Institute's cancer research.



Kristina Young, MD, PhD

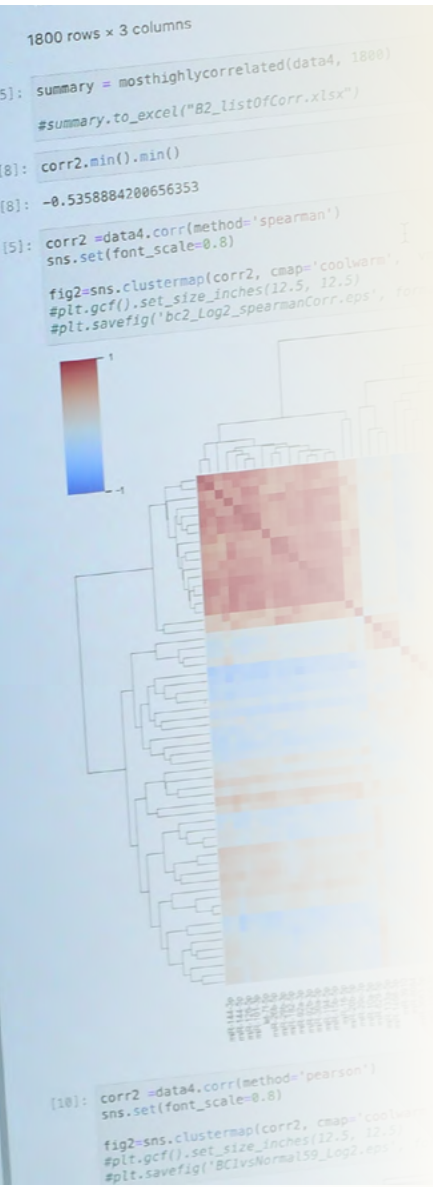
Earle A. Chiles Research Institute, a division of Providence Cancer Institute of Oregon
Providence Cancer Center

Identifying tumors with high TGFβ levels may identify pathway of cancer treatment resistance

Preliminary research suggests that therapies blocking the protein TGFβ can improve the outcomes of radiation, chemotherapy, and immunotherapy for tumors with high TGFβ levels. Building on this evidence, our researchers have developed a promising diagnostic tool to identify patients who may benefit from anti-TGFβ therapies. In 2023, with support from the M.J. Murdock Charitable Trust, the team created a PET tracer that binds to TGFβ and secured funding for additional research. In 2024, they will begin testing this approach in mice using a PET/MRI machine purchased with funding from Elsie Franz Finley.

Watch the video explainer

> Patient selection remains a hurdle for getting these new, promising anti-TGFβ therapies to market. If we can identify the patients most likely to respond to TGFβ blockade therapy, we may be able to move this category of drugs more quickly toward FDA approval.
>
> *Kristina Young, MD, PhD, Associate Member, Tumor Microenvironment Lab, Earle A. Chiles Research Institute, a division of Providence Cancer Institute of Oregon*



Providence Swedish Cancer Institute (SCI)
Center for Blood Disorders and Stem Cell Transplantation

Bispecific antibodies: A promising new immunotherapy for blood cancers

A new type of immunotherapy is transforming the treatment of blood cancers for patients like Roy Bragadeste, whose inspiring story was featured in the Seattle PI. Over 100 patients like Roy have been treated with the agents called bispecific antibodies in clinical trials at SCI. Thanks to this and other research, in 2023, several of these therapies were FDA-approved for patients with lymphoma and myeloma. Our researchers led substantial efforts to develop these therapies, including clinical trial work that contributed to FDA approval of the bispecific antibody glofitamab for use in relapsed or refractory aggressive lymphoma.

Read more



Krish Patel, MD



Swathi Namburi, MD



Daniel Egan, MD

Providence Regional Cancer System
Saint Mary's Regional Cancer Center



Xingwei D. Sui, MD, PhD

Small research sites band together to bring big industry trials to local communities

A collaboration between two teams in Washington State demonstrates Providence's commitment to serving rural communities historically excluded from research. In 2023, caregivers from Lacey and Walla Walla joined forces to showcase how small and mid-sized sites can work together on industry trials. Their efforts to enroll local patients helped pave the way for nationwide clinical use of OncoPrism, a test used to guide treatment decisions for patients with metastatic or recurrent squamous cell carcinoma. By banding together, these dedicated researchers are improving access to cutting-edge clinical trials for all.

Read more

> Innovation and collaboration are critical to achieving excellence in clinical trials research, especially for smaller research sites that may lack the volume of patients needed to attract and participate in industry trials.



Cheryl Krantz, Interim Manager of Southeastern Washington Clinical Trials & Research



Providence | Research Network

Leading the Way in the Genomic Medicine Revolution



At Providence, we imagine a health care system where each patient's journey is informed by their whole-person context, including genomic, clinical, and social factors. We work to ensure that genomic information is accessible and actionable for all patients and caregivers. And we use scientific research and the latest advancements to weave whole-person precision medicine into the fabric of our care.

To learn more about how we're transforming whole-person care at scale, read the Providence Genomics 2023 Annual Report.





Carlo Bifulco, MD



Brian D. Piening, PhD

Genomic testing can improve outcomes for people with advanced cancer, study shows

At the 2023 American Society of Clinical Oncology Annual Meeting in Chicago, Providence researchers presented findings from a multi-year study of the impact of removing testing barriers to comprehensive genomic profiling (CGP) for patients with advanced cancers. The study's motivation stemmed from inadequacies in the delivery of consistent, timely, and comprehensive genomic testing for cancer patients. The team's findings showed that patients in the study who received CGP-guided precision therapy had significantly higher survival outcomes.

Read more





Sandra Brown, MS



Kimberly Childers, MS

Providence Genomics

Using advanced technology to increase access to genetic testing services

Despite well-established guidelines for hereditary cancer risk assessment and genetic testing, these tests are historically underutilized; an estimated 90 percent of individuals with inherited cancer risk do not know they are at risk. In response, Providence is evaluating new models for identifying eligible patients and providing access to genetic testing and counseling, including an AI chatbot questionnaire sent to patients prior to mammograms. Initial testing of this model at seven California sites led to a 10-fold increase in genetic testing compared to paper screenings. Providence Genomics continues expanding the initiative at sites in Southern California and Washington State.

Read more



Providence Genomics

Improving medication management with pharmacogenomics

Pharmacogenomics (PGx), which uses genetic screenings to guide drug therapy, is becoming a cornerstone of precision medicine due to variations in drug safety and efficacy attributed to an individual's genetic profile. From March 2021 to October 2022, Providence Genomics piloted PGx using genome sequencing for 2,111 participants in our Geno4ME program. Participants and their providers received a PGx report and pharmacist consultation, and those with actionable results received personalized medication action plans. Findings were presented at the 2023 American College of Medical Genetics and Genomics Annual Clinical Genetics Meeting.

Read more



Ora K. Gordon, MD



Isabelle Lucas-Beckett, PhD



Lilly Yuan, PharmD



Michael J. Gough, PhD



Marka R. Crittenden, MD, PhD

Earle A. Chiles Research Institute, a division of Providence Cancer Institute of Oregon

Prestigious grant supports study of promising gene target for cancer therapy

A Providence researcher-led investigation into the Dnase1l3 gene's potential as a target for cancer therapy received a prestigious R21 grant in 2023 from the National Institutes of Health—the world's largest public funder of biomedical research. The team's work to date found that Dnase1l3's presence may shut off the immune system's natural response to cancer and lower the chance that treatment is successful. By better understanding this gene, we may be able to develop new therapies and help more patients with stubborn tumors. The R21 award recognizes the project's promising potential to substantially advance biomedical research.

Read more

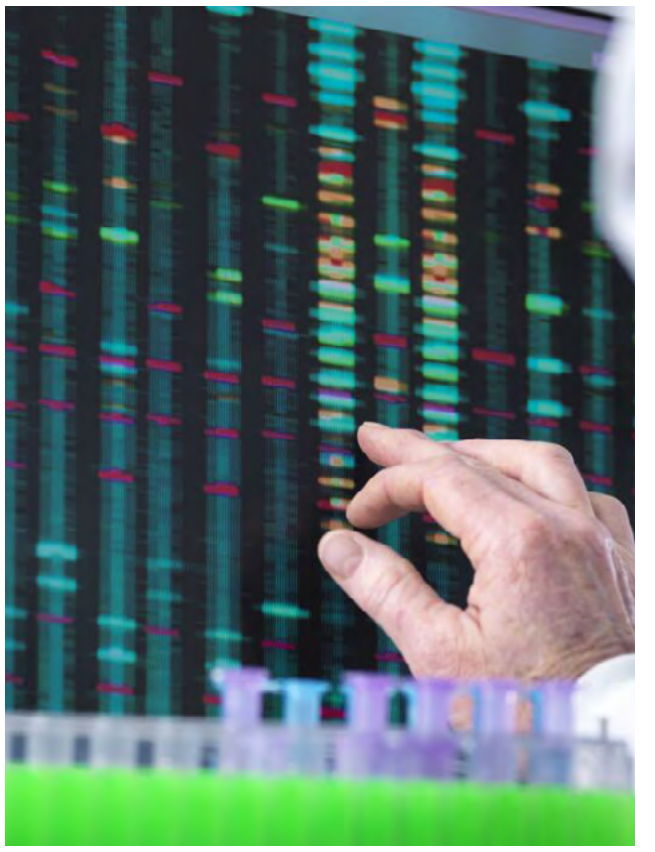


Sarah Roth, PhD

Providence Center for Outcomes Research & Education (CORE)
Providence Genomics

Navigating the path of genomic medicine: Insights from an early detection program

Genomic medicine offers significant promise for more effective prevention and treatment for patients at higher risk of diseases such as cancer. As health care systems launch new genetic screening programs, understanding the patient experience is vital to shaping strategies that overcome barriers to participation and follow-up care. Research conducted through a Providence Genomics early detection and prevention pilot program highlighted a need for clear communication from trusted health care providers about the benefits and next steps, and the importance of providing information about treatment options and follow-up care.



Read more

Accelerating Discovery in Heart & Vascular Health



In 2023, our heart and vascular physicians and researchers continued partnering with patients to explore new frontiers in cardiovascular medicine and contributing to advancements in the diagnosis, treatment, and prevention of heart disease. Below are just a few examples of how our work is accelerating discovery in heart and vascular health.



Sameer A. Gafoor, MD

Swedish Heart & Vascular Institute

Expanding treatment for tricuspid valve regurgitation, a type of heart valve disease

Regurgitation of the heart's tricuspid valve can lead to severe and life-threatening outcomes, including heart failure. Yet patients with severe cases are often too sick for traditional open-heart surgery. Thanks in part to Providence Swedish's participation in the landmark TRISCEND II and TRILUMINATE clinical trials, patients with this condition now have new FDA-approved, minimally invasive treatment options. The procedure uses a small incision in the leg to access the heart and replace or repair the leaky valve, allowing many patients to go home the next day.

Read more

> Providence Swedish has a long-standing track record of excellence in research and patient care. Clinical trials allow physicians access to next-generation technology, making new diagnostics and treatment options available to patients.
>
> *Sameer A. Gafoor, MD, Medical Director of Structural Heart Disease, Providence Swedish*



Eric Lehr, MD, PhD

Swedish Heart & Vascular Institute

Building evidence around treatment strategies for pulmonary embolisms

Pulmonary embolism (PE) is the third most common cause of cardiovascular death. While new treatments have been developed, the best options for treating patients with intermediate-risk PE are unclear due to a lack of robust outcomes data. A Providence Swedish-led study of 566 PE patients suggests that delivering care with the multidisciplinary care teams known as a Pulmonary Embolism Response Team (PERT) may help save lives. The study also demonstrated that Percutaneous Catheter Thrombectomy may help people spend less time in the hospital.

Read more



Tyler J. Gluckman, MD, MHA

Center for Cardiovascular Analytics, Research + Data Science (CARDS)

Examining real-world use & outcomes of weight loss medications

GLP-1 receptor agonists, a class of medications initially approved to treat diabetes, have received increased attention due to their ability to promote weight loss. Two Providence-supported studies provide insights into the real-world use of these treatments. One study of 275,000 patients revealed a seven-fold increase in first-time prescriptions between 2018 and 2023, particularly among patients without diabetes. A second looked at 41,223 patients treated with the weight loss drugs semaglutide and tirzepatide and found that overweight patients taking tirzepatide experienced greater overall weight loss. This work received coverage in *People* and other national media.

Read the preprint: "Comparative Effectiveness of Semaglutide and Tirzepatide"

Read the preprint: "First-Time Prescribing of GLP-1 Receptor Agonists from 2018–2023"

> Weight loss drugs have the potential to positively impact patients across a wide range of health conditions, including diabetes and cardiovascular disease. Our research in collaboration with Truveta has important clinical, financial, and health policy implications, as these drugs are being actively discussed in the medical field and popular press.
>
> *Tyler J. Gluckman, MD, MHA, Medical Director, CARDS*



Kateri Spinelli, PhD

Center for Cardiovascular Analytics, Research + Data Science (CARDS)

Understanding the role of social determinants of health in heart failure patients

The social determinants of health (SDOH) play a major role in health outcomes and are vital to designing population health management strategies in areas such as heart failure. Yet health care providers are often unequipped to identify SDOH for patients. Using an innovative approach that leveraged electronic medical record (EMR) data, the social vulnerability index, and a machine learning statistical model, researchers at CARDS identified three distinct clusters of patients with unique health care needs, utilization, and post-discharge outcomes, demonstrating the potential for SDOH data to help guide clinicians in delivering more effective care.

Read more

> Identifying and addressing disparities in care is a key goal of Providence and CARDS. It is our hope that in the future, a metric such as the social vulnerability index can be integrated into the EMR to aid clinical decision making and align community support services at the point of care.
>
> *Kateri Spinelli, PhD, Manager, Clinical Research, CARDS*



Tyler J. Gluckman, MD, MHA

Center for Cardiovascular Analytics, Research + Data Science (CARDS)

Identifying gaps in heart failure-related care

Heart failure is a global pandemic and a rising cause of morbidity and mortality. Drawing on electronic medical records data from 61,238 patients discharged from Providence hospitals over five years, researchers at CARDS sought to better understand patterns of assigned International Classification of Disease (ICD-10) diagnosis codes among patients hospitalized for heart failure and the implications of these trends for quality improvement initiatives and health services research that utilize these data. Results revealed recent shifts in ICD-10 codes assigned to patients at discharge and a substantial opportunity to improve the prescription of guideline-directed medical therapy across multiple drug classes.

Read more



Daniel Spoon, MD

Providence Heart Institute Structural Heart Program

Bringing leading-edge cardiovascular research to rural communities

Clinical trials usually begin in large academic medical centers, which are typically located in cities. Patients in rural areas often find it difficult to access the latest research and advancements. Providence is changing that by bringing clinical trials to patients in rural areas. For example, by recruiting Western Montana patients into the APOLLO trial, our caregivers are increasing access to a new, minimally invasive option for mitral valve replacement for patients who are not eligible for surgery, including those in remote areas who may have trouble getting to the hospital for follow-up.

Read more

> We are one of the few research centers in our region and the only cardiovascular clinical trial center in Montana. By bringing these trials to our community, we are providing access to therapies that would otherwise be unavailable.
>
> *Daniel Spoon, MD, Providence Heart Institute Structural Heart Program*



Pictured: Caregivers from the Providence Heart Institute Structural Heart Program team at Providence Saint Patrick Hospital, Missoula, Montana

Pioneering Next-Generation Treatments in Neurology



Providence's dedicated neuroscientists and researchers continue to relentlessly pursue breakthroughs in neurology, unraveling the mysteries of the brain and pioneering new treatments for neurological conditions. Here's a glimpse into our ongoing efforts to drive neuroscience forward and pave the way for discoveries that improve patient outcomes worldwide.



Santosh Kesari, MD, PhD

Pacific Neuroscience Institute
Saint John's Cancer Institute

Advancing treatments for chordoma, an ultra-rare tumor of the skull & spine

Chordomas are rare tumors diagnosed in approximately 300 people annually in the U.S. A pilot study completed in 2023 delivered promising results for patients with this potentially life-threatening disease with limited treatment options. The study tested the chemotherapy drug pemetrexed for patients with recurrent or advanced chordoma. Of the 14 patients on the trial, 10 had their tumors stabilize or shrink. Two had their tumors shrink by more than 30 percent, and a majority of the patients experienced improvements in symptoms.

Read more

> A subset of chordoma patients on this trial had tremendous clinical benefit. We look forward to building on our findings with pemetrexed as the backbone of combination therapies in future clinical trials.
>
> *Santosh Kesari, MD, PhD, Chair, Department of Translational Neurosciences, Director of Neuro-oncology, Saint John's Cancer Institute, Pacific Neuroscience Institute*





Stanley Cohan, MD, PhD

Providence Multiple Sclerosis Center

A potential new agent for treatment of multiple sclerosis (MS)

In collaboration with the NIH, research conducted at Providence has shown promising results when administering the fatty acid derivative dimethylsynaptamide to mice in a well-recognized model of MS. Not only did this agent delay disease onset and significantly reduce its severity, but researchers also saw a marked reduction in the infiltration of disease-causing white blood cells and reduced activation of cells, called microglia, in the brain and spinal cord. Microglia are believed to be a major contributor to progressive disability in human MS. The team is conducting further experiments in anticipation of an application to the FDA for human trials.

Read more

Learn more about how philanthropy is helping unlock the mysteries of MS in the Philanthropy section of this report



Prakash Ambady, MD

Providence Brain & Spine Institute (PBSI)

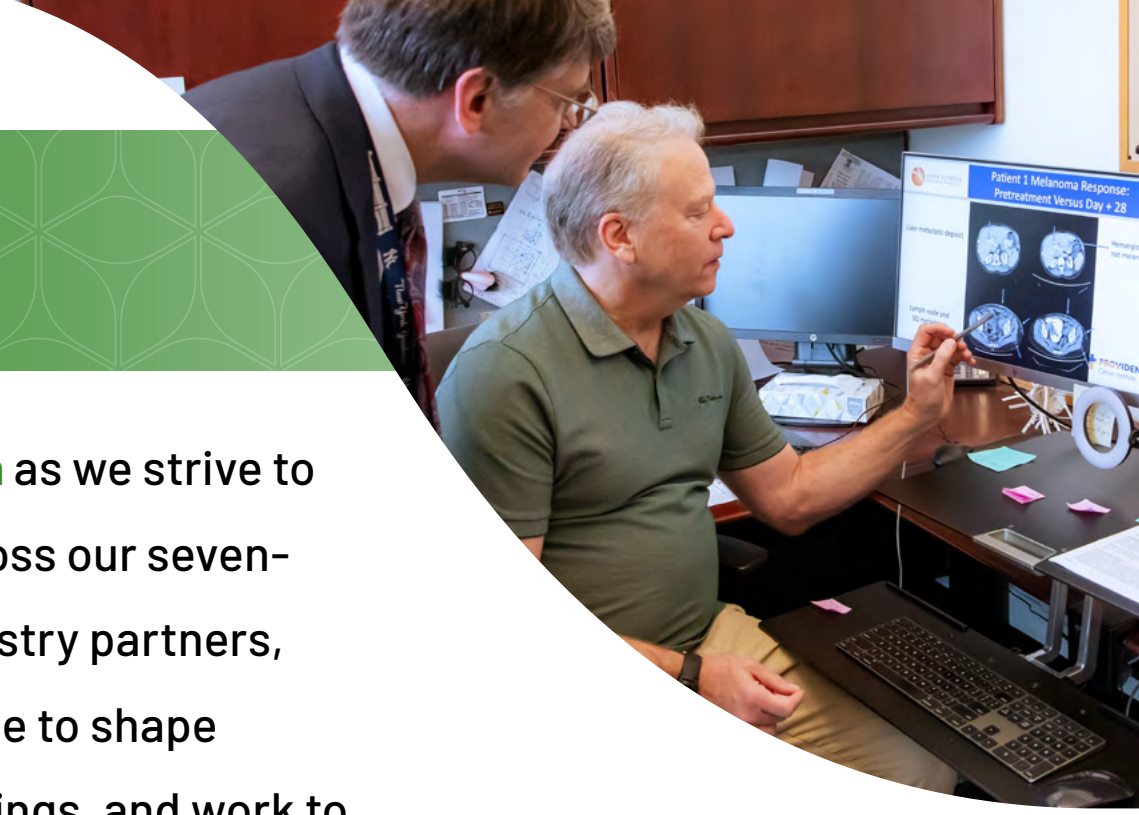
Can an immunotherapy prevent recurrence of an aggressive brain tumor?

Primary central nervous system lymphoma (PCNSL) is an extremely rare but aggressive brain tumor. In 2023, PBSI began serving as the coordinating center and lead sponsor of a unique national Phase II clinical trial to examine if maintenance immunotherapy with binutuzumab, a targeted cancer drug, may prevent tumor recurrence. If successful, this will be an important step to advance care for these patients and provide a significantly more tolerable alternative to current treatment options.

Read more



Collaborating & Innovating for a Healthier Future



Pictured: Brendan D. Curti, MD, and Andrew D. Weinberg, PhD, Earle A. Chiles Research Institute, a division of Providence Cancer Institute of Oregon

Collaboration is integral to Providence's mission as we strive to enhance population health and health equity across our seven-state region. Together with our patients and industry partners, Providence's researchers and caregivers continue to shape innovative solutions, test them in real-world settings, and work to translate today's best ideas into tomorrow's standards of care.



Katherine R. Tuttle, MD, FASN, FACP, FNKF

Providence Inland Northwest Health

A breakthrough treatment for chronic kidney disease (CKD)

Results from a clinical trial published as a lead article in *The Lancet* are giving new hope for patients with CKD and paving the way for a Phase III mega-trial with more than 11,000 participants that researchers hope will lead to the approval of a game-changing treatment for this widespread disease. The study found that the aldosterone synthase inhibitor BI 690517 substantially reduced albuminuria, a sign of kidney damage, for 50 percent of participants. When paired with an SGLT2 inhibitor, along with the current standard-of-care (ACE inhibition or angiotensin receptor blocker), 70 percent responded with a substantial reduction in albuminuria.

Read more

> Seventy-five percent of all people on dialysis have diabetes or hypertensive kidney disease. These agents—if we can get it right in terms of awareness, access, and detection at a stage where it's treatable—might make dialysis almost obsolete. This is within reach.
>
> *Katherine Tuttle, MD, Executive Director for Research, Providence Inland Northwest Health*



Jason Goldman, MD



Katherine R. Tuttle, MD, FASN, FACP, FNKF

Providence Swedish
Providence Inland Northwest Health

Providence supports nationwide initiative to identify treatments for long COVID

Two Pacific Northwest-based research teams at Providence launched trials in 2023 that will evaluate potential treatments for long COVID, which is marked by long-term symptoms following infection by the virus that causes COVID-19. The trials were informed by findings from the NIH RECOVER initiative, a large nationwide research program designed to understand, treat, and prevent long COVID. Our teams have enrolled and followed over 300 participants in NIH RECOVER since 2022. This vital next phase of work will focus on several symptoms described as most burdensome by people experiencing long COVID.

Read more

> By participating in these clinical trials, patients with long COVID have an opportunity to contribute to the greater good as we work to better understand and support those living with this condition.
>
> *Jason Goldman, MD, Infectious Disease Specialist, Providence Swedish*



Keri Vartanian, PhD

> Our research illustrates that long COVID is an intersectional health challenge that impacts individuals' physical, mental, and social health. Accordingly, our treatments and responses must also focus on considering and caring for the whole person.
>
> *Keri Vartanian, PhD, Director of CORE*

Providence Center for Outcomes Research & Education (CORE)

Understanding the whole person impacts of long COVID based on patient experiences

A study by CORE and the Providence Research Network offers valuable insights into patient experiences with long COVID. Focusing on the patient perspective by using patient narratives and survey data, CORE identified four groupings of patients that encompass the wide-ranging experiences of people with long COVID. The research illustrates how physical, mental, and social health must be considered together to effectively manage and treat patients with this challenging disease. This work was published in *Scientific Reports* and received media coverage in the international publication *TIME*.

Read more



Hannah Cohen-Cline, PhD, MPH

Providence Center for Outcomes Research & Education (CORE)

Building evidence around value-based payments in primary care

Health care payers increasingly use value-based payments (VBP) to incentivize clinical performance on quality, cost, and patient outcomes. A study by CORE evaluated the implementation of a type of VBP called the Primary Care Payment Model (PCPM) at 130 clinics serving members of an Oregon-based payer with Medicaid and Medicare Advantage plans. The study found increased connections to and use of primary and specialty care among members served by clinics participating in the model. Findings also highlight the importance of staff engagement and buy-in when implementing such models.

Read more



Joseph Kaempf, MD



Shih-Ting Chiu, PhD

Providence Women & Children's Institute

Innovative scoring method improves premature infant care worldwide

Providence researchers have developed a groundbreaking scoring method to assess the care provided to premature infants in Neonatal Intensive Care Units (NICUs). The score combines mortality and major morbidity data using advanced risk-adjustment, providing a comprehensive evaluation of NICU proficiency and efficiency. Tested in 10 North American NICUs, this approach has yielded significant insights into neonatology outcomes. It also illustrates the elusiveness of the Triple Aim of Health Care and is influencing NICU care globally, with ongoing refinement and collaboration across multiple institutions.

Read more

> Our work has led to the publication of the first illustration of the vaunted Triple Aim of Health Care from any specialty or country. Our team is proud to lead the development of the quality, safety, and value standards that are positively influencing premature infant care worldwide.
>
> *Joseph Kaempf, MD, Medical Director, Value, Research & Innovation, Providence Women & Children's Institute*



Elizabeth Schenk, PhD, MHI, RN, FAAN



Teresa Rangel, PhD, MSN, RN, CNL

Providence Sacred Heart Medical Center
Multiple Providence sites

Revealing health care workers' perceptions & behaviors around climate change

The World Health Organization considers climate change the single greatest threat to human health. With approximately 9–14 percent of U.S. workers employed in health care, this workforce could mobilize to significantly improve climate issues, including dangerous levels of carbon emissions. Nurse investigators surveyed 1,300 Providence health care professionals using the Climate and Health Tool (CHANT), revealing high levels of awareness, concern, motivation, and climate-preserving behaviors taken at home, yet fewer self-reported actions taken at work. These findings emphasize opportunities to encourage behavior changes among health care professionals to reduce carbon emissions.

Read more



Philanthropy

In 2023, **GENEROUS DONORS INVESTED $17.8 MILLION** to advance innovative research, leading to breakthroughs, improved outcomes, and clinical excellence for patients at Providence and beyond.

On the next pages are several examples of how philanthropy makes this vital work possible.

Your philanthropy is transforming the future of health care.

THANK YOU





Unlocking the mysteries of MS through people power, technology, & philanthropy

The Pacific Northwest has one of the highest rates of multiple sclerosis worldwide. The Swedish MS Center, which celebrated its 10-year anniversary in 2023, is a leader in MS research and clinical trials, thanks in large part to philanthropy. The center is specially designed to meet the needs of patients living with MS. Serving over 4,000 patients annually, the center provides coordinated care across a range of specialties and offers vocational support, social services, an adventure program, neurocognitive support, support groups, a wellness program, and more.

Read more

> Thanks to the generosity of our community this past year, our research program has received special philanthropic investments, enabling us to pursue innovative studies and clinical trials. We are endlessly grateful for this commitment to finding answers and therapies for our loved ones.



James Bowen, MD,
Medical Director, Swedish
Multiple Sclerosis Center

Personal experience & trust inspire a major gift to explore the next frontier in melanoma research



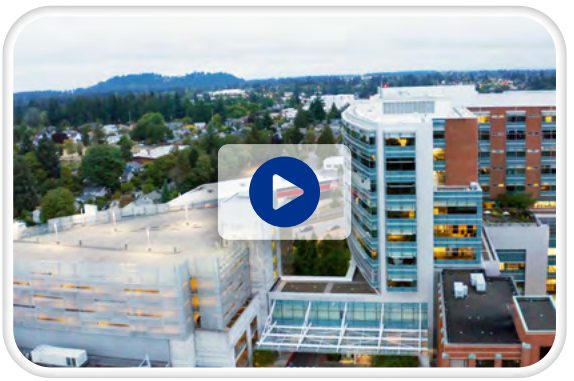
The Borstein Family Foundation's generous gift to Saint John's Cancer Institute was inspired by the institute's groundbreaking work in combating melanoma, an aggressive and dangerous form of skin cancer that causes 7,000 deaths in the U.S. annually. "Saint John's has one of the best-known programs in the world," explains foundation cofounder Alan Borstein, who says the family was also attracted to the institute's efficient scale and lack of excessive bureaucracy, which enables it to move more quickly in its work than some of the larger, university-based medical research centers.

"The Borstein family's gift will help fund research to explore the spatial immune characterization of tumors," says Maria L. Ascierto, PhD, director of translational immunology at the Saint John's Cancer Institute, who adds, "This research is considered the next frontier in gaining insight into immunotherapeutic success or failure and will lead to the development of better-informed treatment strategies."

Read more

> You always have a hope of eliminating a disease in one form or another—making the treatment safer and quicker. There's an awful lot of research to be done.

Alan Borstein,
longtime donor to
Saint John's Cancer Institute



Click to read more and view the documentary.

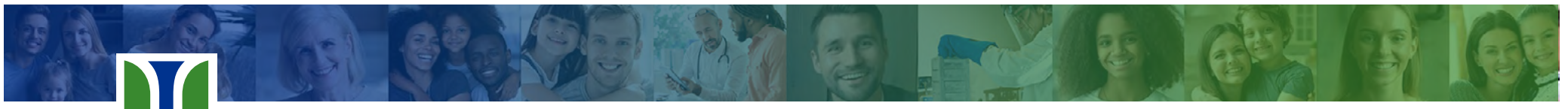
Documentary highlights how donors power breakthrough immunotherapy for incurable cancers

The 2023 documentary "Within Reach: The Fight to Finish Cancer" goes behind the scenes of an immunotherapy clinical trial at the Earle A. Chiles Research Institute, a division of Providence Cancer Institute of Oregon, where doctors and scientists race against the clock to create a revolutionary cancer therapy for patients who have exhausted all other forms of treatment. Watch as Providence researchers make international headlines with a gene-engineered, adoptive T-cell transfer therapy for patients with pancreatic cancer and other solid tumors. Meet the first patients ever to receive this innovative, donor-funded immunotherapy. Philanthropic support is essential to advancing cancer research and care. With the generosity of donors, together, we can finish cancer for good.

> "Our community and our donors are absolutely essential to what we do. We cannot do it without their support.



Eric Tran, PhD, Associate Member, Adoptive Cell Therapy Laboratory, Earle A. Chiles Research Institute, a division of Providence Cancer Institute of Oregon



Your philanthropy is transforming the future of health care.

Donor generosity funds clinical research and infrastructure that is leading to **breakthroughs in treatment**, helping **address disparities in health care** and making it easier for **rural and underserved patients** to participate in innovative treatments and clinical trials.

LEARN MORE about Providence's Clinical Institutes and donate at *Foundation.Providence.org/Institutes.*

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Find your local foundation at the *Providence Foundations website.*

Providence
Research Network

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