

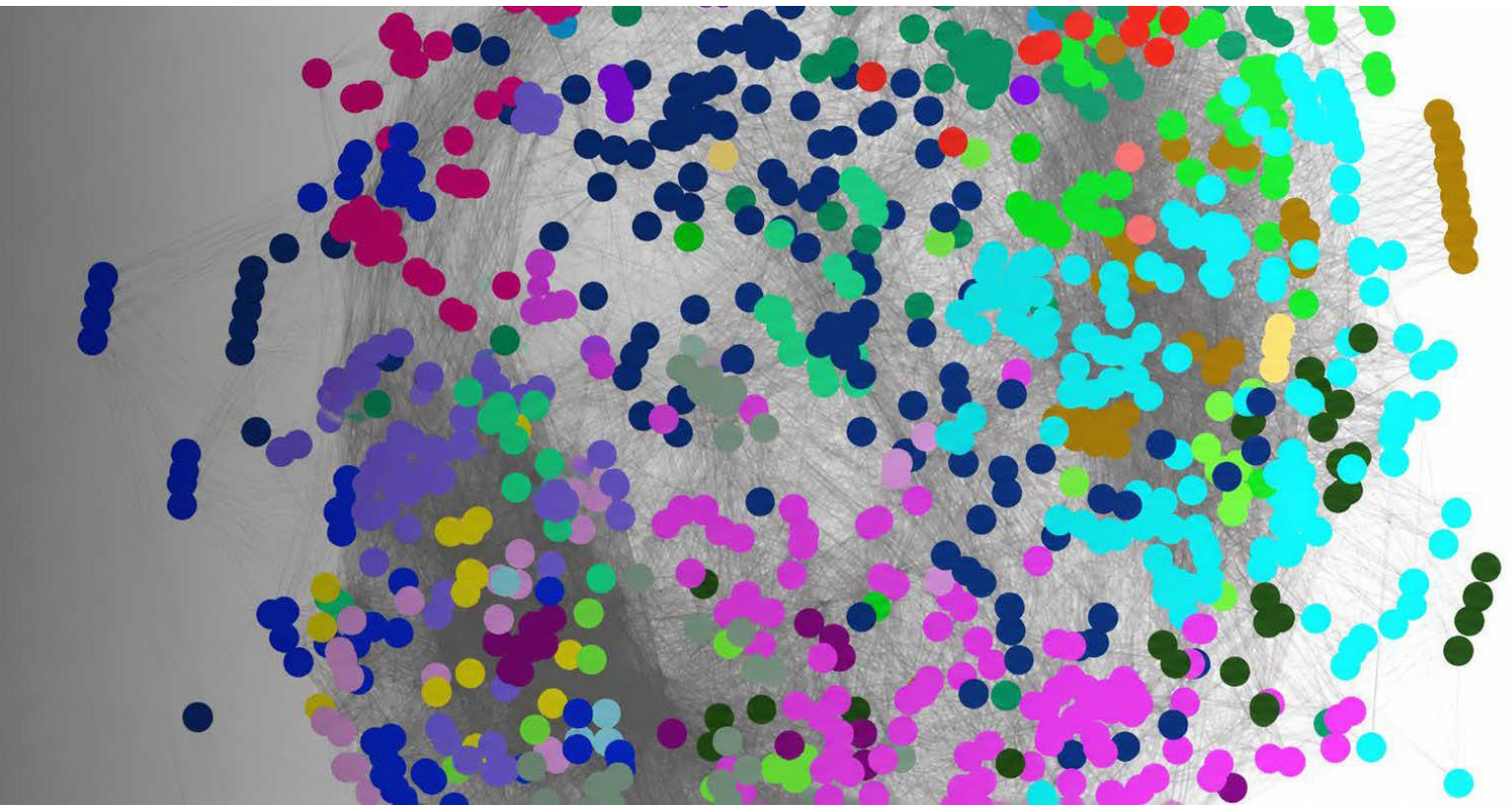
iSARP Integrated Sarcoma Research Program



Arnie Charbonneau Cancer Institute
Integrated Sarcoma
Research Program

Leadership in Transformative Sarcoma Care

2025 Annual Report



Contact:

iSARP Lead:

Michael Monument MD, MSc, FRCSC
mjmonume@ucalgary.ca

iSARP Medical Director:

Omar Khan MD, MBA, FRCPC
omar.khan@albertahealthservices.ca



Integrated Sarcoma Research Program (iSARP)

Sarcoma represents one of the most complex and heterogeneous groups of human cancers, with substantial unmet clinical need. Patients frequently face limited treatment options and poor outcomes in advanced disease.

The Integrated Sarcoma Research Program (iSARP) was established to confront these challenges. By combining clinical care, translational research, and precision oncology within a single integrated framework, iSARP is accelerating discovery while ensuring that new insights are rapidly translated to patient impact.

Since its formal launch in 2022, iSARP has grown into a nationally recognized program spanning precision oncology, immunotherapy, surgery, radiation science, digital health, and clinical trials, positioning Calgary as a leader in sarcoma research and care.

This report highlights iSARP's progress in 2025, including:

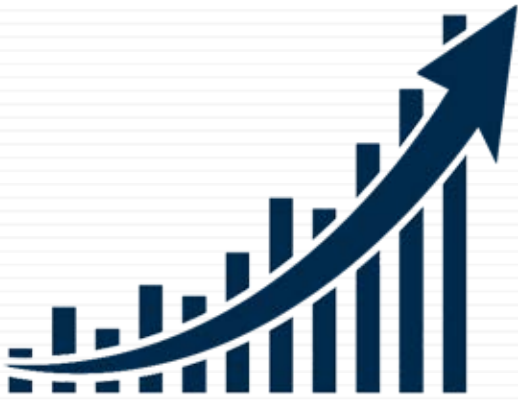
- Expansion of high-risk sarcoma molecular profiling and precision oncology pipelines
- Growth in industry-sponsored and cooperative group clinical trials
- Advances in translational immunotherapy, STING and radiation immune modulation, and CAR T-cell optimization
- Development of patient-centred digital outcome platforms
- Investment in training the next generation of sarcoma scientists and clinician-investigators

Together, these milestones reflect a program entering a phase of accelerated growth, national leadership, and meaningful clinical impact.



Michael J. Monument, MD, MSc, FRCSC — Program Director, Integrated Sarcoma Research Program (iSARP), University of Calgary

iSARP AT AN INFLECTION POINT



Since formalizing iSARP in 2022, the program has grown to over 45 members, including clinicians, scientists, trainees, and research professionals. Together, iSARP has built the infrastructure, partnerships, and research capacity positioning Calgary as a national leader in sarcoma research and clinical care.



45+

Program Members

Clinicians, scientists, trainees,
and research professionals
working together

2022

Formal Launch

Establishment of fully
integrated multidisciplinary
program

270+

Sarcomas Profiled

Advanced multi-omic
sequencing and profiling
of high-risk sarcomas

2025 HIGHLIGHTS



Computational Biology & Precision Oncology

Completion of Phase I of the MOHCCN Gold Cohort. Led by iSARP in partnership with the Charbonneau Cancer Institute, the Prairies consortium has completed multi-omic profiling of **270 high-risk sarcomas**, establishing a foundational dataset for precision oncology and translational discovery.



Molecular Tumour Board Conferences

In 2025, we launched sarcoma-specific molecular tumour boards, leveraging high-resolution multi-omic data from our MOHCCN Gold Cohort. These forums bring together sarcoma medical oncology and computational biology expertise to interpret precision oncology reports and guide therapeutic decision-making for patients with limited treatment options.



Clinical Trials Participation & Leadership

Increasing year over year engagement in national and international clinical trials, with expanded access to early-phase trials for sarcoma patients in Alberta.



Digital Health Platforms

Launch of the ACTIVATION platform and mobile app, enabling integration of patient-reported outcomes and real-world mobility data across the continuum of sarcoma care.



Training & Education

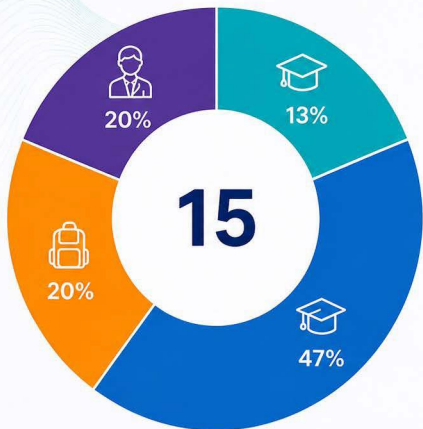
Ongoing growth of a multidisciplinary training environment, with trainees embedded across clinical and translational programs and contributing directly to funded research and publications.



Impact & Visibility

iSARP members have presented high-impact findings at leading international conferences, published in high-quality peer-reviewed journals, and strengthened collaborations with national organizations including the Musculoskeletal Tumor Society, CanSaRCC, and Marathon of Hope Cancer Centres Network.

iSARP Trainees



Postdoctoral Fellows

3



PhD Students

2



Master's Students

7



Summer Students

3

PROGRAM IMPACT

iSARP is now directly influencing how sarcoma is studied and treated in Calgary:



Molecular Profiling

Integration of molecular profiling into real-world clinical decision-making



Clinical Trials

Expansion of early-phase clinical trial infrastructure and expertise



Digital Platforms

Patient-centered digital outcome platforms and patient-reported outcome measures



Translational Programs

Translational therapeutics and immunology programs

PROGRESS ACROSS STRATEGIC iSARP PRIORITIES

Sarcoma specimen biorepository

Supported by the University of Calgary, Clark Smith Tumor Bank (CSTB), iSARP continues to prioritize collection and cryopreservation of primary, recurrent, and metastatic sarcoma specimens from adult and pediatric surgeries and biopsies.

To date, over 550 unique sarcoma samples from 365 patients have been registered into the CSTB. This foundational resource enables a multitude of downstream clinical and research initiatives such as precision oncology pipelines, target discovery, and pursuit of fundamental discoveries for sarcomas.

Comprehensive Molecular Profiling of High-Risk Sarcomas

Led by Drs. Morrissy and Monument, we continue to build one of the most ambitious sarcoma molecular profiling initiatives in Canada. Through collaboration with the Terry Fox Marathon of Hope Cancer Centres Network (MOHCCN), we are creating a deeply annotated dataset linking genomic, transcriptomic, and proteomic data with high-quality clinical outcomes.



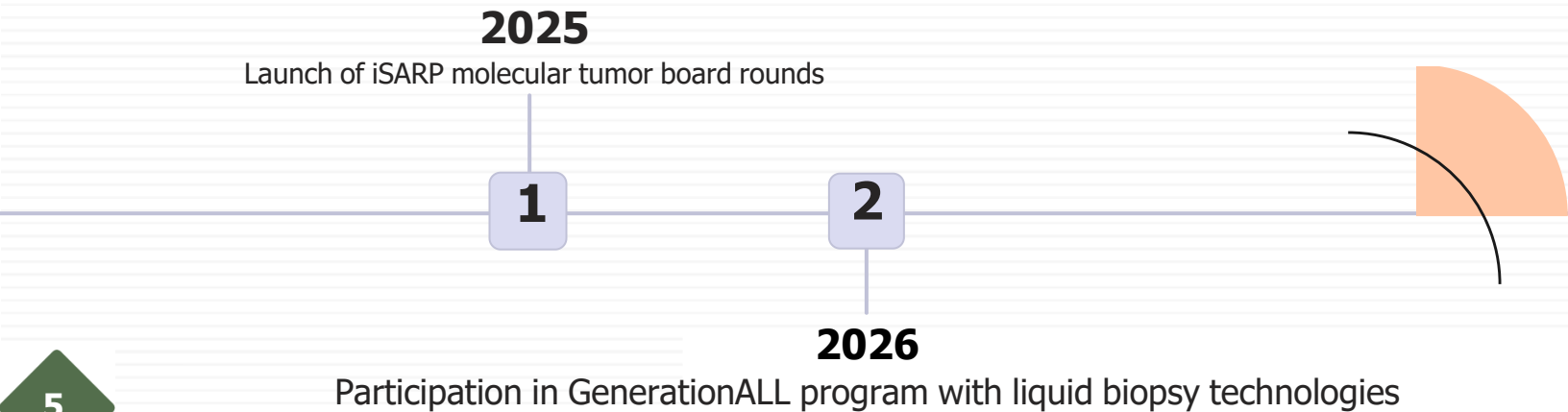
Comprehensive multi-omic analysis completed Dataset informing precision oncology efforts

This dataset is increasingly informing precision oncology efforts, correlative biology, and clinically relevant hypothesis-driven translational research initiatives.

Patient-Specific Molecular Report Cards and Precision Oncology

In 2025, we initiated iSARP "molecular tumor board" discussions, making important progress in operationalizing patient-specific sarcoma molecular reporting. These tools synthesize genomic alterations, molecular signatures, and predicted therapeutic vulnerabilities to support individualized treatment strategies in multiple patients with relapsed or metastatic disease.

In 2026, iSARP will participate in the Terry Fox MOHCCN "GenerationALL" program to develop and test prospective precision oncology reporting tools and liquid biopsy technologies to monitor treatment responses and enhance disease surveillance sensitivities.



Clinical Trials Growth and National Leadership

Enhancing clinical trial access for Alberta sarcoma patients remains a cornerstone of iSARP's mandate. Led by Drs. Khan and Feng, iSARP continues to see year-over-year expansion of clinical trials openings for sarcoma and related musculoskeletal neoplasms. iSARP also continues to strengthen its role within CanSaRCC, contributing high-quality clinical and outcomes data into this national sarcoma consortium.

iSARP Clinical Trials

CHONQUER Study

A Phase 3, multicenter, double-blind, randomized, placebo-controlled study of ivosidenib in participants ≥ 18 years of age with locally advanced or metastatic conventional chondrosarcoma with an IDH1 mutation, untreated or previously treated with 1 systemic treatment regimen. Calgary is a participating centre.

CarboStar

A phase II, randomized, open-label study to assess the efficacy, safety, and pharmacokinetics (PK) of maintenance cabozantinib (XL184) plus best supportive care (BSC) versus BSC in children, adolescents and young adults (AYA) with unresectable residual osteosarcoma either at diagnosis or at first relapse after standard treatment.

SRC8

A Randomized Phase III Trial of Doxorubicin + Pembrolizumab Versus Doxorubicin Alone for the Treatment of Undifferentiated Pleomorphic Sarcoma (UPS) and Related Poorly Differentiated Sarcomas. Calgary is a participating centre.

INSIGHT

An International, Phase 3, Randomized, Multicenter, Open-label Study of Ripretinib vs Sunitinib in Patients with Advanced GIST With KIT Exon 11 and Co-occurring KIT Exons 17 and/or 18 Mutations Who Were Previously Treated with Imatinib.

REPAIR

Multi-centre study evaluating functional recovery after surgical intervention for lower-extremity metastatic bone disease using PROMIS®. Calgary is a participating centre; iSARP manages enrollment and data reporting.

PERFORM

Evaluates the effect of resection and reconstruction versus internal fixation on patient-important outcomes in metastatic proximal femur disease. Calgary is a participating centre; iSARP manages enrollment and data reporting.

ACTIVATION

Investigates PROMIS® patient-reported outcome and mobility in sarcoma and metastatic bone disease patients using a smartphone application to capture real-world activity data. Calgary is the coordinating centre.

TANGENT

A global Phase 3 clinical trial evaluating emactuzumab for patients with unresectable Tenosynovial Giant Cell Tumor (TGCT).

Sarcoma Immunotherapy and Translational Science

Our translational immunotherapy portfolio continues to expand, with a focused strategy to overcome immune resistance in sarcoma and enable effective integration of immunotherapy with surgery, radiation, and cellular therapies.

Key translational programs include:

Immune-competent murine models of sarcoma

iSARP has established a comprehensive suite of inducible and engraftable murine models spanning multiple soft tissue sarcoma histologies (including UPS and synovial sarcoma) and osteosarcoma. Development of an alveolar soft part sarcoma (ASPS) model is underway, directly supporting University of Calgary-led clinical translation of GPNMB-targeted CAR T-cell therapies (GCAR1) in solid tumors.

STING immunotherapy and immune conditioning strategies

iSARP investigators have developed deep expertise in STING pathway activation to convert immune "cold" sarcoma models into immunologically active tumors. Robust preclinical data demonstrate both local and systemic immune activation, with translational efforts now focused on enhancing immune-mediated disease control in combination with surgery in both human and comparative (canine) sarcoma models.

Radiation-enabled immunotherapy platforms (SmART+)

The SmART+ (Precision X-Ray) small animal radiation platform enables high-fidelity modelling of clinically relevant radiotherapy. This infrastructure supports mechanistic and translational studies exploring radiation as an immunologic modulator and its integration with STING activation and cellular therapies.

CAR T-cell optimization in solid tumors

Leveraging the synthetic immunology expertise and translational pipelines within the Riddell Centre for Cancer Immunotherapy (RCCI), iSARP is developing next-generation CAR T-cell strategies. Preclinical studies are focused on optimizing CAR T-cell trafficking, persistence, and function using STING-based immune conditioning and immunogenic radiation approaches.

Synthetic lethality and radiation sensitization in osteosarcoma

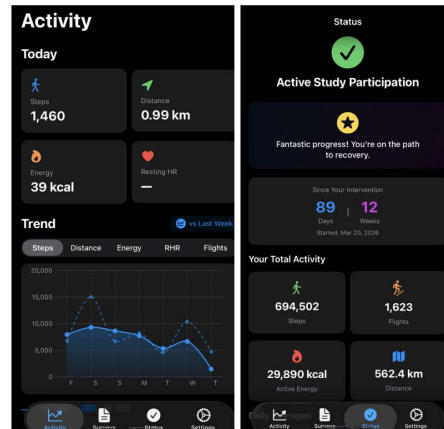
Using osteosarcoma models, iSARP is investigating novel synthetic lethality approaches targeting PTEN-deficient tumors, with the goal of enhancing tumor sensitivity to radiation therapy and identifying clinically actionable combination strategies.



❖ Patient-Centred Digital Integration Technology

Led by Dr. Joseph Kendal, iSARP team members have developed a digital health and outcomes app (ACTIVATION) that integrates patient smartphone technology with patient reported outcome measures and continuous mobility tracking.

The ACTIVATION app is now published on the Apple-iOS app store with an android version anticipated Q2 2026. This powerful tool will enable iSARP investigators to enhance patient outcome reporting and integrate mobility metrics across the cancer care continuum. Numerous multi-centre clinical trials testing this platform are underway.



01

App Development

Creation of ACTIVATION platform integrating patient-reported outcomes

02

App Store Launch

Published on Apple-iOS app store with Android version Q2 2026

03

Clinical Trials

Integration into multi-centre clinical trials across cancer care continuum

❖ Education, Training, and Capacity Building

Training the next generation of sarcoma researchers remains a defining strength of iSARP

Postdoctoral Fellows

- Hyojin Song (research) Aly
- Abdel Kareem (research)
- John Pinzon (clinical)

PhD students:

- Karys Hildebrand (MD/PhD program)
- Kurt Hildebrand

MSc students

- Alex Iwasyk
- Alyssa Federico (Clinician Investigator Program)
- Max Labrecque
- Logan Mahoney
- Geneece Gilbert
- Sooyeon Ruy

Undergraduate students

- Mac Xing
- Jaden Lei

iSARP has become a destination program for those interested in integrated sarcoma research. This investment ensures long-term sustainability and continued innovation in the field.

Local, National, and International Collaborations

1

University of Calgary, Riddell Centre for Cancer Immunotherapy

STING and radiation-based immune conditioning strategies to improve CAR T therapy in sarcomas. Translational study.

2

University of Alberta, Division of Hematology

Exploring the biology and impact of vWF expression and osteosarcoma lung metastases. Translational study.

3

University of Calgary, Faculty of Kinesiology

ACTIVATION app development. Clinical study.

4

University of Toronto, Divisions of Orthopaedic Surgery and Medical Oncology

CanSaRRC collaboration and ACTIVATION app clinical trial in sarcoma. Clinical study.

5

Mayo Clinic (Rochester and Scottsdale), Department of Orthopaedic Surgery

ACTIVATION app clinical trial in sarcoma. Clinical study.

6

Canadian Cancer Trials Group (CCTG)

Dr. Monument, sarcoma executive committee.

iSARP AWARDS AND RECOGNITION

Joe Kendal, Avenue Magazine – Calgary's 40 under 40 for his contributions to sarcoma research and leadership in the community.

Michael Monument was named to the CCTG Sarcoma Executive Committee

Omar Khan was named a site medical informatics lead for Connect Care, Alberta's province-wide medical records system.

Omar Khan was named provincial lead for the Alberta Sarcoma Tumour Group.

Omar Khan and Michael Monument were featured in the October 2025 Alberta Cancer Foundation LEAP Magazine (<https://albertacancer.ca/your-impact/leap-magazine/>)

Alyssa Federico, accepted into the University of Calgary – Clinician Investigator Program (CIP) for her research testing digital health technology in sarcoma

Karys Hildebrand, Surgeon's Day Peter Cruse Award – Best Surgery Related Abstract (Podium Presentation as Surgeon's Day)

Logan Mahoney, Linda Marchuk Memorial Graduate Scholarship, \$3,300

Logan Mahoney, Canadian Institute of Healthcare Research (CIHR) Canada Graduate Scholarships Master's Award, \$27,000

Logan Mahoney, Katharine Sarah Melinda Mei-Ling Thomas Rare Diseases/Biomedical Engineering Research Scholarship, \$5,000

Logan Mahoney, Charbonneau Institute Kids Cancer Care Trainee Travel Award, \$2,500



iSARP Research Grants and Funding

Joseph Kendal (PI)

American Academy of Orthopaedic Surgeons (AAOS), Musculoskeletal Tumor Society (MSTS), and Sarcoma Strong. Project: Evaluating the Implementation, Utility, and Clinical Importance of the Patient-Reported Outcome Measure Information System (PROMIS®) in Sarcoma Patients: A Multi-Centered Prospective Cohort Study. \$110,000 USD

Joseph Kendal (PI)

Orthopaedic Surgery Catalyst Grant. Project: Validation of a Mobile Platform for Remote PROMIS® and Mobility Monitoring in Orthopedic Oncology Patients. \$25,000 CAD

Joseph Kendal (PI), Alyssa Federico (MSc trainee)

Calgary Orthopaedic Resident Education Fund. Project: Evaluating the Implementation, Utility, and Clinical Importance of the Patient-Reported Outcome Measure Information System (PROMIS®) in Sarcoma. \$6000 CAD

Joseph Kendal (PI), Alyssa Federico (MSc trainee)

Calgary Surgical Research Development Fund. Project: Validation of a Mobile Platform for Remote PROMIS® and Mobility Monitoring in Orthopedic Oncology Patients. \$4000 CAD

Under Review

Michael Monument (PI), Franz Zemp (Co-PI), Sorana Morrissy (Co-PI), Ted Verhey (Co-PI)

Canadian Institutes of Health Research (CIHR) – 2026 Spring Project Grant. **Project:** Conditioning the Tumor and Empowering the Cell: A New Paradigm for CAR T Therapy in Soft Tissue Sarcomas.
\$1,545,000 CAD

Nadia Jahroudi (PI), Michael Monument (CoPI)

Canadian Cancer Society – 2026 Challenge Grants.
Project: Mechanisms and Impact of Acquired de novo von Willebrand Factor Expression in Osteosarcoma Cancer Cells.
\$535,000 CAD

Joseph Kendal (PI), Michael Monument (Co-app), Fred Nicholls (Co-app),

Canadian Cancer Society – 2026 Emerging Scholars Grants.
Project: Evaluating the Implementation, Utility, and Clinical Importance of the Patient-Reported Outcome Measure Information System (PROMIS®) in Sarcoma Patients: A Multi-Centered Prospective Cohort Study.
\$500,000 CAD

Active

Prism Schneider (PI), Michael Monument (Co-PI)

Canadian Institutes of Health Research (CIHR) – Project Grant.
Project: Evaluating Individual Cancer-related Thrombosis Mechanisms to Inform Personalized Thromboprophylaxis in Patients with Metastatic Bone Disease.
\$1,043,615 CAN

Michael Monument (PI)

Canadian Institutes of Health Research (CIHR) – Project Grant.
Project: Harnessing STING activation for the treatment of sarcoma. **\$1,071,000 CAN**

Michael Monument (PI)

Canada Foundation for Innovation (CFI) John R. Evans Leaders Fund (JELF Award).
Project: Therapeutic synergy of surgery, radiation, and STING immunotherapy in pre-clinical models of sarcoma.
\$400,000 CAN

Michael Monument (PI), Sorana Morrissy (co-app), Jordan Stosky (co-app)

Cancer Research Society Operating Grants.
Project: Beyond Local Control: Repurposing radiation therapy as an immunogenic modulator in soft tissue sarcomas.
\$125,000 CAN

Sorana Morrissy (co-PI), Michael Monument (co-PI), Jennifer Chan (co-PI).

Terry Fox Research Institute (TFRI); Prairie Cancer Research Consortium (PR2C) Marathon of Hope Cancer Centre Network.
Project: Precision target discovery in high-risk soft tissue sarcoma. **\$908,000 CAN**

LOOKING AHEAD : THE NEXT PHASE OF GROWTH

iSARP is entering a phase of accelerated expansion, with new infrastructure, national programs, and for meaningful clinical impact. Strategic priorities for 2026 and beyond translational pipelines positioning the program for meaningful clinical impact. include:

Strategic priorities for 2026 and beyond include:

• Translational immuno-oncology infrastructure expansion:

New Translational Immuno-Oncology Suite

Opening of a newly renovated translational immuno-oncology suite within the UCalgary Health Sciences building will establish a high-throughput research environment integrating animal husbandry, advanced tumor imaging, surgical and procedural space, microscopy, small-animal radiation platforms (SmART+), cell culture, and tissue processing.

Enhanced Collaboration Discovery

This joint initiative between the Cumming School of Medicine, Riddell Centre for Cancer Immunotherapy (RCCI), iSARP, and the Charbonneau Cancer Institute will significantly enhance cross-program collaboration and accelerate translational discovery.

• Advancing Precision Oncology in Sarcoma

1

Terry Fox MOHCCN GenerationALL Program

iSARP will serve as one of the lead sarcoma groups within the national GenerationALL initiative, enabling prospective whole-genome and transcriptome analysis integrated with clinical care.

2

Beyond Traditional Sequencing

This program represents a major step beyond traditional panel-based sequencing approaches, with the potential to uncover clinically actionable genomic alterations currently missed in sarcoma. Integration of ctDNA and liquid biopsy platforms will further support early detection of systemic disease and relapse monitoring.

3

Expanded Precision Oncology Capabilities

Through GenerationALL and existing MOHCCN infrastructure, iSARP will advance patient-specific molecular reporting, real-time clinical integration, and prospective evaluation of genomics-guided treatment strategies in high-risk sarcoma populations.

••• Growth of digital health and patient-centered data platforms:

Continued development of the ACTIVATION platform will include Android deployment, integration of AI-supported patient engagement tools, and expansion of surgical rehabilitation and sarcoma-specific education modules. The platform will scale to enroll sarcoma patients across the full continuum of care, from diagnosis through survivorship and palliative phases. Long-term goal is for provincial sarcoma integration.



••• Expansion of clinical trials and translational pipelines:

01

Synthetic lethality and radiation sensitization in osteosarcoma:

Expansion of preclinical programs targeting PTEN-deficient osteosarcoma, with the goal of enhancing tumor sensitivity to radiation therapy, addressing a major and persistent clinical gap in osteosarcoma care.

02

Neoadjuvant STING immunotherapy as a surgical adjunct:

Continued development of intra-tumoral STING agonist strategies to activate local and systemic anti-tumor immunity in advance of surgical resection. Translational efforts are progressing toward evaluation in both canine sarcoma models and early-phase human studies.

03

CAR T-cell optimization in solid tumors:

Leveraging RCCI expertise and CAR T platforms to develop combination strategies incorporating STING activation and immunogenic radiation, with the goal of improving CAR T-cell infiltration, persistence, and efficacy in immune “cold” solid tumors.



Expansion of investigator-initiated and cooperative group clinical trials:



iSARP continues to grow its clinical trial portfolio through participation and leadership in national studies, including:

CCTG-sponsored SRC.8 exploring Doxorubicin with or without immune checkpoint blockade for metastatic UPS.

CCTG-sponsored Harmony trial evaluating hypofractionated radiotherapy with or without immune checkpoint inhibition.

CCTG-sponsored and RCCI-lead GCAR trial targeting GPNMB-expressing tumors (including ASPS).

CHONQUER: a phase III randomized trial of ivosidenib in IDH1-mutant conventional chondrosarcoma.

FINAL THOUGHTS

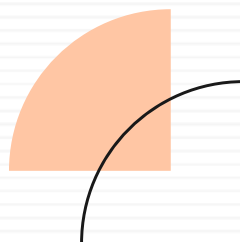
We are extremely proud of iSARP's accomplishments so far. This program has been built by people who care deeply about getting better answers for patients with sarcoma. We are still early in many ways, but the pieces are now in place - people, infrastructure, and partnerships - to do work that wasn't possible here even a few years ago.

There is a lot still to prove. We will keep building, keep asking the right questions, and keep pushing to translate what we learn into better care for our patients.

Sincerely,



Michael J. Monument MD, MSc, FRCSC
Musculoskeletal Oncology Surgeon
Associate Professor, University of Calgary





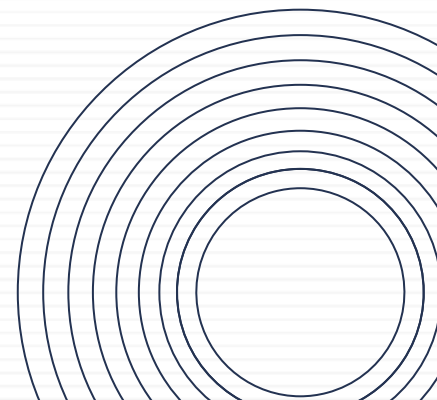
APPENDIX I: Peer-Reviewed Publications (2025)

- **Hildebrand KM, Hildebrand KN, Salazar Arcila C**, Marritt K, Rajwani J, **Elmi Assadzadeh G**, Dufour A, Jirik FR, **Monument MJ**. The human STING agonist E7766 induces immunogenic tumor clearance independent of tumor-intrinsic STING expression in the KRASG12D/+ Trp53-/- murine model of sarcoma. *Oncoimmunology*. 2025;14(1):2534912. doi:10.1080/2162402X.2025.2534912
- **Iwasyk A**, Gaur SS, **Federico A**, Holash JR, Nicholls F, **Monument MJ, Kendal JK**. Wearable technology in orthopedic surgery: applications and future directions. *JBJS Rev*. 2025;13(7):e25.0067
- Padmore GM, **Kurien EC, Monument MJ, Mack L, Bouchard-Fortier A**, iSARP Group. Preoperative chemoradiation (modified Eilber protocol) versus preoperative/postoperative radiotherapy for soft tissue sarcomas: a population-based analysis. *Curr Oncol*. 2025;32(7):374
- Taqi K, Stockley C, Wood M, Przybojewski S, **Bouchard-Fortier A, Mack L**. Cryotherapy in the treatment of extra-abdominal desmoid tumors: a review. *Curr Oncol*. 2025;32(3):137. doi:10.3390/curroncol32030137
- Taqi K, Stockley C, Fyfe A, Temple W, **Mack L, Bouchard-Fortier A**. Quality of life following cytoreductive surgery and hyperthermic intraperitoneal chemotherapy: a Canadian experience. *Can J Surg*. 2025;68(6):E476
- Khabaz K, Newman-Hung NJ, Kallini JR, **Kendal JK**, Christ AB, Bernthal NM, Wessel LE. Assessment of artificial intelligence chatbot responses to common patient questions on bone sarcoma. *J Surg Oncol*. 2025;131(4):719-724
- Deyell RJ, Soroka HP, Sharp D, Ruus C, Bone JN, Gervais MK, Roux A, **Feng X**, Logie N, Prudhomme N, Holloway C. Whole abdominal radiotherapy is tolerable and effective in children and young adults with intra-abdominal sarcoma: a CanSaRCC study. *Pediatr Blood Cancer*. 2025;72(8):e31768
- Wajda BG, Ferrie LE, Abbott AG, **Elmi Assadzadeh G, Monument MJ, Kendal JK**. Denosumab vs zoledronic acid for metastatic bone disease: a systematic review and meta-analysis of randomized controlled trials. *Cancers (Basel)*. 2025;17(3):388. doi:10.3390/cancers17030388
- Terry Fox Research Institute Marathon of Hope Cancer Centres Network. The Terry Fox Research Institute Marathon of Hope Cancer Centres Network: a pan-Canadian precision oncology initiative. *Cancer Cell*. 2025;43(4):587-592. doi:10.1016/j.ccell.2025.03.014



APPENDIX I: Peer-Reviewed Publications (2025)

- Weadick CS, Alshibany A, **Michael MJ**, Holloway C, **Feng X**, Lemieux C, Razak AA. Incidence, prevalence and treatment of epithelioid haemangioendothelioma in Canada: a CanSaRCC study. *Eur J Cancer*. 2025;231:116100
- Sabharwal S, Becker RG, **Monument MJ**, Schneider P, Schubert T, Ghert M, Morris CD. Changes in clinical practice after publication of the PARITY randomized controlled trial. *J Am Acad Orthop Surg*. 2025;10-5435
- Nikitas J, **Kendal JK**, Savjani RR, Jackson N, Peterson N, Deng J, Reddy VK. Five-day preoperative radiation therapy for patients with high-risk soft tissue sarcoma: a nonrandomized clinical trial. *JAMA Netw Open*. 2025;8(12):e2550195
- Rajwani J, Vishnevskiy D, Turk M, Naumenko V, Gafuik C, Kim DS, Mah LK, Snelling S, Gonzales GA, Xue J, Chanda A, Potts KG, Todesco HM, Lau KCK, **Hildebrand KM**, **Chan J**, Liao S, **Monument MJ**, Hyrcza M, Bose P, Jenne CN, Canton J, Zemp FJ, Mahoney DJ. VSVΔM51 drives CD8+ T cell-mediated tumour regression through infection of both cancer and non-cancer cells. *Nat Commun*. 2024;15(1):9933. doi:10.1038/s41467-024-54111-6
- **Chan J**, **Kendal JK**, Duan Z, Ferreira A, Samiei A, Nelson SD, Hornicek FJ. Mutational analysis of primary and advanced chordoma tissue using next-generation sequencing. *Cancer*. 2025;131(16):e70033
- Newman-Hung NJ, Shah AA, **Kendal JK**, Bernthal NM, Wessel LE, PARITY Investigators. Machine learning prediction of early reoperation following lower extremity tumor resection and endoprosthetic reconstruction: a PARITY trial secondary analysis. *J Orthop Surg Res*. 2025;20(1):727
- **Flaman AN**, Zhang L, Dickson BC, Demicco EG. Criteria for MDM2 fluorescence in situ hybridization testing in well-differentiated adipocytic neoplasms: a retrospective utilization review. *Virchows Arch*. 2025;1-11
- Vanacker H, Brahmi M, Pissaloux D, Meurgey A, Karanian M, **Feng X**, Dufresne A. Assessing targetable NTRK1/2/3 fusions in mesenchymal tumors via whole-exome RNA sequencing. *ESMO Open*. 2025;10(9):105555



APPENDIX II: Conference Presentations

Apr 2025

Hildebrand K, Salazar Arcila C, Monument MJ. Are macrophages limiting CAR T-cell efficacy in soft tissue sarcoma? Summit for Cancer Immunotherapy; Toronto, ON, Canada. Poster presentation. Apr 2025

Song H. Single-cell temporal profiling of a novel CAR T-cell product throughout treatment. BioCanRx Annual Scientific Meeting (Summit4CI). Poster presentation.

Gill G, Manoharan VT, Liu H, uh Y, Ahn BY, Mah L, Monument MJ, Saleh R, Henning J, Shafey M, Chan J, Zemp FJ, Mahoney DJ, Morrissy AS. Spatial transcriptomics reveals immunotherapy resistance mechanisms to CAR T cells in ASPS. Summit for Cancer Immunotherapy. Poster presentation.

June 2025

Hildebrand K, Salazar Arcila C, Monument MJ. Investigating the role of STING signaling in immune and non-immune cellular compartments on survival phenotypes in the KP model of undifferentiated pleomorphic sarcoma. Canadian Orthopaedic Association Annual Meeting; Vancouver, BC, Canada. Podium presentation. June 11–14, 2025

Sept 2025

Mahoney L, Salazar Arcila C, Monument MJ. Harnessing radiation therapy to overcome resistance to STING activation in soft tissue sarcoma. Canadian Association of Radiation Oncologists (CARO) Conference. Poster presentation.

Nov 2025

Hildebrand K, Salazar Arcila C, Monument MJ. Translational STING agonist E7766 induces tumor clearance independent of tumor STING expression in the KP model of soft tissue sarcoma. Canadian Cancer Research Conference; Calgary, AB, Canada. Poster presentation. Nov 2–4, 2025

Hildebrand K, Salazar Arcila C, Monument MJ. STING immunotherapy induces tumor clearance and protects against disease recurrence in the KP model of soft tissue sarcoma. Canadian Cancer Research Conference; Calgary, AB, Canada. Poster presentation. Nov 2–4, 2025.

Mahoney L, Salazar Arcila C, Monument MJ. Harnessing radiation therapy to overcome STING immunotherapy resistance in soft tissue sarcoma. Canadian Cancer Research Conference; Calgary, AB, Canada. Poster presentation.

Hildebrand K, Salazar Arcila C, Monument MJ. High-dose versus low-dose radiation differentially programs macrophage phenotypes in murine soft tissue sarcoma. Canadian Cancer Research Conference; Calgary, AB, Canada. Oral presentation. Nov 2025

Hildebrand K, Salazar Arcila C, Monument MJ. High-dose radiation promotes immune-suppressive macrophage phenotypes, whereas low-dose radiation promotes immunogenic macrophage phenotypes in an immune-competent murine model of soft tissue sarcoma. Canadian Association of Radiation Oncologists (CARO) Annual Meeting; Calgary, AB, Canada. Poster presentation.

Hildebrand K, Salazar Arcila C, Monument MJ. Radiation dose-dependent macrophage polarization in soft tissue sarcoma. Canadian Association for Radiation Oncology Annual Meeting; Calgary, AB, Canada. Oral presentation.

Nov 2025

Hildebrand K, Salazar Arcila C, Monument

MJ. Macrophage influence on CAR T-cell therapy in soft tissue sarcoma. Canadian Cancer Research Conference; Calgary, AB, Canada. Poster presentation.

Hildebrand K, Salazar Arcila C, Monument

MJ. Characterization of two novel immune-competent murine models of soft tissue sarcoma. Canadian Cancer Research Conference; Calgary, AB, Canada. Poster presentation.

Labrecque M, Salazar Arcila C, Monument

MJ. Characterizing the effects of radiation therapy on the genomic landscape of murine models of undifferentiated pleomorphic sarcoma. Canadian Cancer Research Conference; Calgary, AB, Canada. Podium presentation.

Nov 2025 (CTOS)

Hildebrand K, Salazar Arcila C,

Monument MJ. Role of lymphocytes in tumor clearance and systemic protection following STING immunotherapy in the KP model of soft tissue sarcoma. Connective Tissue Oncology Society Annual Meeting; Boca Raton, FL, USA. Poster presentation.

Hildebrand K, Salazar Arcila C,

Monument MJ. Radiation-driven macrophage phenotypes in soft tissue sarcoma. Connective Tissue Oncology Society Annual Meeting; Boca Raton, FL, USA. Oral presentation.

Hildebrand K, Salazar Arcila C,

Monument MJ. Assessing macrophage-mediated inhibition of CAR T-cell therapy in soft tissue sarcoma. Connective Tissue Oncology Society Annual Meeting; Boca Raton, FL, USA. Poster presentation.

Dec 2025

Mahoney L, Salazar Arcila C, Monument MJ.

Harnessing radiation therapy to overcome STING resistance in soft tissue sarcoma. Musculoskeletal Tumor Society (MSTS) International Conference. Poster presentation.

Dec 2025

Gill G, Manoharan VT, Liu H, Suh Y, Ahn BY, Mah L, Monument MJ, Saleh R, Henning J, Shafey M, Chan J, Zemp FJ, Mahoney DJ, Morrissy AS. High-resolution spatial analyses

identify immunotherapy resistance mechanisms to CAR T-cell therapy in ASPS. Canadian Cancer Research Alliance. Poster presentation.

