



Banff Sport Medicine  
**FOUNDATION**

# ANNUAL REPORT 2020 - 2021

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## OUR MISSION

To advance research, prevention, treatment, and rehabilitation of musculoskeletal and sport injuries among people of all ages and abilities. This is achieved through the synergistic interaction of three core components: Research, Education and Clinical care.



## OUR VISION

World-class sport medicine and arthroscopy clinical care, research, and education.

# 2020 - 2021 Year in Review

Committed to advancing research, prevention, treatment, and rehabilitation of musculoskeletal and sport injuries among people of all ages and abilities.

Visit us at [www.bsmfoundation.ca](http://www.bsmfoundation.ca) or follow us on social media to learn more.  

8

Journal Articles  
Published



14

Conference  
Presentations



5

More Healthcare  
Professionals  
Trained



8

Presentations  
to  
Healthcare  
Professionals,  
Coaches, Athletes, &  
Community



NEW

Research Study on  
Gender, Diversity &  
Inclusion in  
Canadian  
Orthopaedics



33

New Evidence-  
Based Articles  
Published  
on Website



Most Popular  
Website Article



#Knees  
4Skis

Most Watched  
YouTube video



NEW  
Ski Fit  
Ready  
Program



Thank  
you

To All of Our  
Supporters!



## MESSAGE FROM THE CHAIR

Dr. S. Mark Heard, MD, PhD, FRCSC, Dip Sport Med.  
Orthopaedic Surgeon, Clinical Associate Professor



As 2021 draws to a close and I reflect on the year of activities at Banff Sport Medicine Foundation (BSMF), we have a lot to be grateful for. Despite a year of hospital closures, virtual consults and follow ups, and working from home, the Foundation has risen to the challenges of our time and excelled in all of its three pillars – these being research, education and clinical excellence.

I'd like to recognise the Foundation staff who are so positive, professional, self-motivated and produce such high standards in any work they do. Thanks to Sarah, a true leader whose tireless efforts make BSMF the envy of many centers, publishing numerous articles a year in the top peer-reviewed journals. She wears many hats co-ordinating the activities of the Foundation, which she does with class. Julie-Anne is a quiet gem who has done an outstanding job on our many educational activities, with an ever-growing digital video collection from injury prevention, postoperative rehab and current controversies in sport medicine, to name a few. She also has been doing the heavy work in grant writing and as we mature as a Foundation and get recognised for our work, the grants will hopefully be easier to attain. Many thanks to our Research Assistant, Allegra, and summer student, George, who complete data entry and follow-up with patients to elevate the quality of our papers and publications. These young minds are the cream of the crop of upcoming science and health care professionals who are gaining valuable skills in research and are integral to the quality of work we produce. We hope as they grow and mature in their careers they stay connected to BSMF and return as healthcare students, medical residents, or fellows, or continue to further their careers in research.

I want to thank the Board who support the Vision of the Foundation as it grows and matures. Special thanks to John Clarkson and Kevin Nugent for their business acumen and wisdom. The future is bright! In 2022 we will see all elements of Banff Sport Medicine – the Clinic and Foundation - under one roof. Orthopaedic surgeons, Sport Medicine physicians, along with physiotherapists, orthotists and nearby radiologists all working together to help patients. The ability to be collaborative, and integrated in all aspects of care, research and education is something we have been pursuing for the last several years and it is finally coming to fruition. Thank you to Tyler Rice and Company for stickhandling the complexities of this venture in such an incredibly professional manner. I feel your team has had our backs through this whole journey.

Lastly to all the people that I work with, my colleagues, superb administrative team, hospital staff, and patients - thank you all for the support you have given this program in its entirety.

## MESSAGE FROM THE DIRECTOR OF RESEARCH



Dr. Laurie A. Hiemstra, MD, PhD, FRCSC  
Orthopaedic Surgeon, Assistant Professor

The research program at the BSMF has continued to branch out and expand over the last year despite being unable to recruit patients into new studies. We continue to work within the guidelines and restrictions to keep the program relevant and forward-thinking. We have continued to collect data on our pre- and post-operative patients, keeping our databases up-to-date. Functional testing clinics were allowed with appropriate precautions, and many extra clinics were held to catch up on those patients whose assessment was delayed during the COVID-19 closures.

Further validation of several of our patient reported outcome measures has been completed and published. We were able to take a closer look at our data from the COVID-related closures with regards to the effects the closure had on our patients according to age and sex. Research and investigation into gender diversity in orthopaedic surgery has become another important branch of our research efforts. Collaborations with University of Western Ontario and University of Pittsburgh are ongoing with our ACL reconstruction STABILITY II trial ready to go as soon as recruitment is allowed. We, once again, feel thankful that the robust data collection at Banff Sport Medicine and the diverse research project portfolio have not left us aimless during the extended restrictions.

A huge thank you to all of our patients who diligently complete outcome measure questionnaires and return in person for functional testing assessments. The goal of our research is excellence in patient care, and we cannot achieve what we do without the help and support of all of our patients.

Stay healthy, stay moving, but most of all, stay safe.



## MESSAGE FROM THE DIRECTOR OF EDUCATION

Dr. Michaela Kopka, MD, FRCSC, DipSportMed  
Orthopaedic Surgeon



As 2021 draws to a close, it is safe to say that many of us will not be sad to see it go. What a strange and difficult year this has been. As the challenges of COVID-19 persisted, we were forced to make various sacrifices and modifications in our plans. This holds true for many of the educational initiatives of the BSMF. However, similar to the previous pandemic year, we rose to the challenge and managed to deliver our objectives in novel and creative ways.

Our team welcomed a new Orthopaedic Sport Medicine Fellow, Dr. Alexis Rousseau-Saine, who joined us after completing his first Fellowship in reconstructive surgery of the knee at the University of Ottawa. Dr. Rousseau-Saine is already a highly skilled and fully-certified Orthopaedic Surgeon who will spend his year in Banff honing his arthroscopic skills. He then plans to return to a faculty position at the Université de Montréal. Additionally, the BSMF team hosted a number of medical students and residents over the course of the year. Not only did these students learn about sport medicine principles and cutting-edge techniques, but many were involved in up-dating and creating educational content for our BSMF website. If you haven't had a chance yet, be sure to check out some of our brand-new content at [bsmfoundation.ca/health-library/](https://bsmfoundation.ca/health-library/).

Despite the ongoing restrictions to in-person gatherings, the BSMF team was able to deliver some exciting virtual educational events. Our previous Fellow, Dr. Meghan Marien, hosted a session on pediatric fracture management with the emergency room physicians in the Bow Valley. She also ran an injury prevention seminar targeting youth and adolescent athletes. The popular "Knees4Skis" session took place with Dr. Heard and local physiotherapist Lynne Richardson. The team presented strategies to keep fit, healthy, and injury free during the up-coming ski/snowboard season. These virtual events were well attended and received within (as well as outside) our community.

Although the last two years of the COVID-19 pandemic have presented many challenges, they have also brought with them a number of important lessons and opportunities for growth. At BSMF, we have learned to be flexible and creative in the delivery of our content. We have learned to utilize virtual resources and have actually managed to reach more individuals this way! Our goals in 2022 include the ongoing expansion of our website with videos and synopses of various musculoskeletal injuries/conditions, along with live virtual (and hopefully in-person) educational seminars. Whatever the "new normal" of 2022 may look like, we will stay true to our mission and will continue to raise awareness of musculoskeletal injury prevention and management within our community and beyond.

Stay healthy and safe everyone!

# RESEARCH SPOTLIGHT ~ GENDER DIVERSITY IN ORTHOPAEDICS

Gender equity is a pressing human rights issue in many professional fields and medicine is no exception. Of the surgical specialties, orthopaedics has one of the lowest rates of women and has not made any substantial gains in gender parity over time. Currently, 12.6% of the orthopaedic surgeons in Canada are female, an increase from 5.5% in 2001, an improvement that has taken 20 years to realize.

It has been estimated that it will take up to 180 years to close the gender gap in Canada. Improving gender equity and inclusion in Canadian orthopaedic surgery requires a culture change, and this can only occur when the existing gender-based barriers are recognized and then dismantled.

Earlier this year, in collaboration with several Institutions, the Canadian Orthopaedic Foundation (COF), and the Canadian Orthopaedic Association (COA), BSMF sent a survey to 330 female orthopaedic surgeons in Canada in an attempt to answer the question:

*“What are the perceived barriers faced by Canadian female orthopaedic surgeons and trainees in their education and practice?”*

Participants were asked to answer 47 questions from a validated and published Gender Bias Scale, questions about job satisfaction and burnout, and three open-ended questions.

**220 surgeons completed the survey.**

The results of this survey have been analyzed with a paper to be published shortly.

These results will also shape further in-depth studies on gender diversity in orthopaedics, including strategies to bridge the gaps.

Thank you to **Smith and Nephew** and the **University of Calgary’s Sharpest Knife Grant** for supporting this research!

*Listen to Dr. Hiemstra discuss women in orthopaedics and the importance of representation in the following podcasts!*

[“Making the Invisible Visible”](#). Growth Edge Podcast. Season 5, Episode 22. November 30, 2020.

[“Women in Orthopedics”](#). Ortho Joe. Episode 13, June 7, 2021.



A meniscal transplant being performed by an all female Banff Sport Medicine orthopaedic team!



## VOLUNTEER SPOTLIGHT

We are grateful for the time spent by our healthcare professionals to develop educational material for the [Health Library](#).



Fraser Sprigings  
Keystone Health



Nani Woolings  
Altitude Physiotherapy



Alison Walford  
Ascent Physical Therapy



Didie Hamel-Jolette  
Keystone Health

**Thank you to  
our health  
professional  
volunteers!**



Dr. Ashutosh Vaidya

## THANK YOU TO OUR SUPPORTERS

We continue to develop partnerships and projects with the funding provided by community members, organizations, and industry. The support and generosity of these partnerships provide our communities of Banff, Canmore and beyond with innovative research, education and outreach programs, and evidence-based clinical care.

The Board of Directors and BSMF staff wish to thank those that have generously supported our efforts this past year including our **valued individual donors** and the following organizations:



## RESEARCH & EDUCATION HIGHLIGHTS



### Orthopaedic Fellowship: Sport Medicine and Arthroscopic Reconstruction of the Knee and Shoulder

BSMF welcomed Dr. Alexis Rousseau-Saine in August. Alexis received his medical degree and completed his orthopaedic surgery residency at the Université de Montréal. He then completed a Knee Preservation and Reconstructive Surgery Fellowship at the University of Ottawa.

Alexis is a former CIS football player and now enjoys hiking, fly fishing, hunting and skiing.

Thank you to **Smith & Nephew** for supporting this Fellowship!

### Elective Student Placement

BSMF welcomes a number of requests for 2- to 4- week elective student placements. This year, we welcomed four students. These students spent time working alongside the orthopaedic surgeons as well as reviewing the scientific literature to write an evidence-based article for the [Health Library](#).



Halli Kryzaniak  
MD Candidate  
University of Calgary



Brandon Zhao  
MD Candidate  
University of Alberta



Brodie Ritchie MSc  
MD Candidate  
University of Alberta



Dr Michael James  
Orthopaedic Surgery  
University of Calgary



## Injury Prevention Education & Outreach

Our injury prevention education & outreach programs continue to develop and increase in reach.

### Digital ACL Reconstruction Rehabilitation Program

Since 2019, all Banff Sport Medicine Clinic patients undergoing a primary ACL reconstruction are enrolled in a digital rehabilitation program delivered by an automated emailing service, PhysioAid. This platform sends exercise prescriptions directly to a patient's inbox and provides reminders in the first 6-months following surgery. It also provides support to patients between physiotherapy appointments and essential support to patients that can't access a physiotherapist (patients in remote areas or those without benefits).



Feedback from patients using this program include:

*"I liked that each exercise had a video explanation so I could see the proper form and what the exercise should look like."*

*"The reminders and motivation to keep exercising!"*

*"The videos were extremely helpful when I had completed my complementary round of physiotherapy and could not afford to go to physio."*

This program was made possible with support from **The Calgary Foundation**, The **Banff Canmore Community Foundation**, and **Canmore Rotary Club Charitable Organization**.

### #Knees4Skis: injury prevention presentation for skiers and snowboarders

Despite on-going restrictions due to COVID-19, the BSMF team were able to pivot and present this injury prevention program using a virtual format. Dr. Mark Heard and Lynne Richardson, Physiotherapist from the Rocky Mountain Rehab & Sports Medicine Clinic, delivered a successful and engaging presentation. By hosting this presentation on-line, BSMF was able to expand its reach to hundreds of people across Canada and the world – with over 400 people from Canada, the U.S.A., England and Australia viewing the presentation live on the BSMF Facebook page.

Dr. Mark Heard (left) and  
Lynne Richardson (right)  
presenting at #Knees4Skis



## Ski Fit Ready Exercise Program Pilot

The donations received at #Knees4Skis were used to fund the development of a “Ski Fit” Exercise Program. This program delivers exercises that are demonstrated by a qualified physiotherapist direct to a participant’s email.

Exercises are based on 8 essential recommendations from Dr. Heard and Lynne Richardson during #Knees4Skis, with each exercise progressing through 4 phases of difficulty over an eight-week period.

To pilot this program, BSMF offered it to all #Knees4Skis registrants and over 100 people signed up!

Participants in the pilot were also sent a questionnaire to help us evaluate the program.

70% of survey respondents said the program was helpful in some way.

Some responses to the pilot program included:

*“Good, pertinent information and easy to follow activities.”*

*“I found the short example videos of each exercise to be very helpful. I also liked the format - a limited number of exercises to do each week, ramping up in effort required.”*

*“It is for all age groups”*

*“Keep it going”*

Based on the success of the pilot program, BSMF will offer this program to the public for free during the month of October every year!



## Outreach

BSMF continues to grow its outreach via events, social media, YouTube, a quarterly newsletter, and regularly published website and Health Library articles.

The goal of BSMF's outreach is to advance education on the prevention, management, and early treatment of musculoskeletal injury, to promote new and innovative research, and to promote our education and outreach programs.

## SPORT COVERAGE

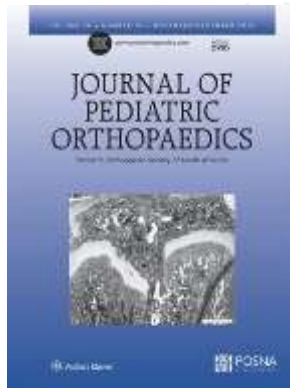
Each year, BSMF physicians and Fellows are involved with providing coverage for events such as FIS World Cup Ski and Snowboard, and the Canadian Finals Rodeo. They also work directly as team physicians for Alpine Canada, Canada Snowboard, Biathlon Canada and Canadian Pro Rodeo. While several events were again cancelled due to COVID-19, BSMF physicians were still able to offer in-person and virtual support to their athletes.

*Photos provided by Dr Andy Reed from pre-COVID-19 events*





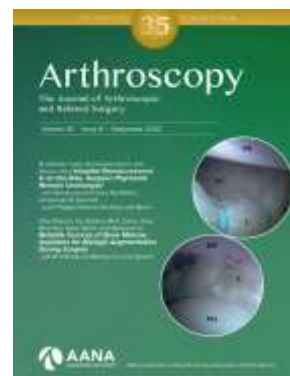
## BSMF PUBLICATIONS 2020 - 2021



Marien M, Lafave MR, Hiemstra LA, Heard SM, Buchko GM, Kerslake S. (2021) Validity, Responsiveness, and Reliability of the ACL-QOL in an Adolescent Population. J Pediatr Orthop. Nov-Dec 01;41(10):e917-e922

Kopka M, Fritz JA, Hiemstra LA, Kerslake S (2021) Female and Younger Orthopaedic Sport Medicine Patients Are More Negatively Affected by COVID-19-Related Health Care Closures. Arthroscopy, Sports Medicine, and Rehabilitation. Oct; 3(5): e1329-e1335

Kopka M., Heard M., Getgood A. (2021) Meniscal Allograft Transplantation: Surgical Technique. In: Kim J.G. (eds) Knee Arthroscopy. Springer, Singapore



Masud, S., Sheehan, B., Rousseau-Saine, A., Tucker, A., Sandman, E., Wong, I., Woodmass, J., Chalal, J., Lobo, J., Grant, J., LeBel, M.-E., Sommerfeldt, M., Kopka, M., Urquhart, N., Carsen, S., Pauyo, T., & Khan, M. (2021). Arthroscopy Association of Canada Position Statement on Exercise for Knee Osteoarthritis: A Systematic Review of Guidelines. Orthopaedic Journal of Sports Medicine. June 9(6)

Batty LM, Firth A, Moatshe G, et al. Association of Ligamentous Laxity, Male Sex, Chronicity, Meniscal Injury, and Posterior Tibial Slope With a High-Grade Preoperative Pivot Shift: A Post Hoc Analysis of the STABILITY Study. Orthopaedic Journal of Sports Medicine. April 2021

Morris N, Jordan MJ, Heard M, Herzog W. (2021) Electromechanical delay of the hamstrings following semitendinosus tendon autografts in return to competition athletes. Eur J Appl Physiol. Mar 12. Jul;121(7):1849-1858



Hiemstra LA, Kerslake S, Lafave MR. (2021) Patellar Apprehension Is Reduced in Most but Not All Patients After Successful Patellar Stabilization. The American Journal of Sports Medicine. Mar;49(4):975-981

The International Orthopaedic Diversity Alliance. (2020) Diversity in orthopaedics and traumatology: a global perspective. EFORT Open Reviews. 5:10, 743-752

# GRANTS



## **Sport Medicine / Arthroscopy of the Knee and Shoulder Fellowship**

ConMed Educational Grant

Smith & Nephew Educational Grant

## **Digital ACL Reconstruction Rehabilitation Program**

The Calgary Foundation

The Banff Canmore Community Foundation

Canmore Rotary Club Charitable Organization

## **Gender Diversity in Orthopaedics**

Smith & Nephew

University of Calgary The Sharpest Knife

## **Youth Injury Prevention Initiative**

The Banff Canmore Community Foundation

The Town of Banff

# FINANCIAL STATEMENTS EXCERPTS

## Banff Sport Medicine Foundation

### Statement of Financial Position

PREPARED BY RICE & COMPANY LLP

September 30, 2021

#### ASSETS

##### CURRENT ASSETS

Cash & Cash Equivalents  
Accounts Receivable  
Inventories  
Sales Tax

##### **TOTAL CURRENT ASSETS**

##### NON-CURRENT ASSETS

Property, Plant & Equipment

##### **TOTAL NON-CURRENT ASSETS**

##### **TOTAL ASSETS**

2021	2020
205,421	125,632
6,326	32,276
29,631	7,756
1,102	1,024
<b>242,480</b>	<b>166,688</b>
655	1,442
<b>655</b>	<b>1,442</b>
<b>243,135</b>	<b>168,130</b>

#### LIABILITIES & NET ASSETS

##### LIABILITIES

Accounts Payable  
Deferred Revenue

##### NET ASSETS

##### **TOTAL LIABILITIES & NET ASSETS**

5,947	30,168
60,000	-
177,188	137,962
<b>243,135</b>	<b>168,130</b>



	Unrestricted	Restricted	2021	2020
REVENUE				
Equipment and injection revenue	178,643	-	178,643	175,717
DIRECT COSTS				
Purchases	102,665	-	102,665	119,664
<b>GROSS PROFIT</b>	<b>75,978</b>	<b>-</b>	<b>75,978</b>	<b>56,053</b>
OTHER INCOME				
Fellowship Income	64,928	-	64,928	-
Donations	45,607	-	45,607	55,833
Grants & Other Income	57,006	-	57,006	96,037
<b>TOTAL OTHER INCOME</b>	<b>167,541</b>	<b>-</b>	<b>167,541</b>	<b>151,870</b>
EXPENSES				
Salaries & Benefits	175,698	-	175,698	139,505
Office expenses	11,577	-	11,577	12,529
Professional Fees	11,685	-	11,685	11,733
Rent	10,255	-	10,255	10,080
Bank charges and Interest	4,970	-	4,970	4,397
Advertising	4,873	-	4,873	3,009
Subcontractors	1,253	(16,804)	(15,551)	1,825
Travel	-	-	-	1,581
Depreciation	786	-	786	786
<b>TOTAL EXPENSES</b>	<b>221,097</b>	<b>(16,804)</b>	<b>204,293</b>	<b>185,445</b>
<b>EXCESS OF REVENUE OVER EXPENSES</b>	<b>22,422</b>	<b>16,804</b>	<b>39,226</b>	<b>22,479</b>

Completed financial statements prepared by Rice & Company LLP available upon request.

## LOOKING FORWARD

BSMF will develop new and current education initiatives including an expansion of our Injury Prevention Education & Outreach Program while fostering relationships with other organizations and partners. We will continue to spread the word about the prevention and early treatment of musculoskeletal injury. We will continue to design and carry out meaningful research that can be rapidly implemented into clinical practice and seek out fruitful collaborations with industry partners and academic institutions.



### Our vision for 2021 - 2022 includes:

- Finalising a 3-year strategic plan to provide a road-map for the BSMF mission, vision, values and strategic goals;
- Implementing the new Youth Injury Prevention initiative;
- Resuming research study recruitment in local and multi-centre clinical trials to assess optimal treatments for musculoskeletal injuries;
- Continuing to develop the BSMF website as an education and research hub for orthopaedics and sport medicine;
- Expanding BSMF's virtual education offerings through collaboration with physiotherapists, other healthcare professionals and researchers;
- Expanding BSMF's injury prevention audience by creating more virtual content across a range of injuries and activities;
- Developing content to host an inaugural Sport Medicine course targetting primary care physicians and allied health practitioners.

## BOARD OF DIRECTORS



**Chair**

Dr Mark Heard



**Secretary**

John Clarkson



**Director**

Dr Laurie Hiemstra



**Director**

Dr Greg Buchko



**Director**

Kevin Nugent

## STAFF DIRECTORY



**Research Director**

Sarah Kerslake BPhy MSc  
Sarah@banffsportmed.ca



**Research & Programs  
Coordinator**

Julie-Anne Frayn PhD  
BSMresearch@banffsportmed.ca



**Research Assistant**

Allegra Bentrim  
research@banffsportmed.ca



## SUPPORT BSMF

As a registered charity, contributions from the community play a crucial role in our work.

Your financial support to carry out leading-edge research and to develop and deliver education and community outreach initiatives assists in advancing the treatment of MUSCULOSKELETAL conditions and injury; helping people get back in motion.

Charitable Registration #793737685RR0001



## DONATE

[www.bsmfoundation.ca](http://www.bsmfoundation.ca)

Box 1300, #207 - 303 Lynx St.  
Banff, Alberta T1L 1B3  
Phone: (403) 760 2897 Extension 6

*Tax receipts for donations are provided.*

## FOLLOW US

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Facebook @BanffSportMedicineFoundation

[www.bsmfoundation.ca](http://www.bsmfoundation.ca)

## STAY INFORMED

Sign up for our quarterly newsletter ([www.bsmfoundation.ca](http://www.bsmfoundation.ca)) to receive expert injury prevention and musculoskeletal health tips, a sneak preview of our latest research, and inspiring patient stories direct to your inbox.