



UNIVERSITY OF ALBERTA
FACULTY OF PHYSICAL
EDUCATION AND RECREATION

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ReCon VI Program



September 2-4, 2016 | Canmore, Alberta | **Choose Your Own Adventure**

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ReCon VI Program at a glance

TIME	FRIDAY	TIME	SATURDAY	TIME	SUNDAY
8:00 AM	Bus Leaves Edmonton	8:00 AM	Breakfast	8:00 AM	Breakfast
		9:00 AM	Research Presentations	9:00 AM	Activity: Geocaching
		9:50 AM	Break		
		10:00 AM	Rod Murray Address: Lindsay Eales		
		11:00 AM	Break	11:00 AM	Break/Check Out
	Bus Arrives in Canmore	11:15 AM	Research Presentations	11:30 AM	Research Presentations
12:00 PM	Registration/Poster Set-up/Lunch on Own	12:05 PM	Bus leaves: 12:30pm	12:15 PM	Lunch
2:00 PM	Welcome & Icebreaker		Lunch & Activity: Hike or Mountain Biking	1:00 PM	Professional Development
3:00 PM	Alumni Talk: Maria Lynn			2:30 PM	Break
4:00 PM	Break/Check In			2:45 PM	Research Presentations
4:30 PM	Poster Session			3:30 PM	Awards & Closing Remarks
4:30 PM			Bus arrives: 4:00pm	4:00 PM	Bus Leaves Canmore
6:30 PM	Break	5:00 PM	Professional Development		
6:30 PM		6:30 PM	Networking		
7:00 PM	Dinner in Canmore: Patrino's	7:00 PM	Dinner at Hotel	8:00 PM	Bus Arrives in Edmonton

Message from the Co-Chairs

Normand Boulé, PhD
Associate Dean Graduate

Welcome to ReCon VI! The theme of the conference is *Choose Your Own Adventure*. What better location for this event than Canmore, Alberta!

ReCon, which was first held in 2011, brings together a unique combination of Retreat and Conference formats. It is a time to be curious, to think, to challenge our views of the world, and learn from one another. The idea for an annual graduate student event was proposed by Dean Kerry Mummery and brought to fruition under the guidance of the Physical Education and Recreation Graduate Student Society (PERGSS) and previous Associate Deans (Graduate), Dr. Stewart Petersen and Dr. Donna Goodwin. I'm very pleased to start my term as Associate Dean Graduate with such a great occasion to meet many of our grad students and share this wonderful experience.

Over the next few days you will have the opportunity to connect with students and professors who have a large variety of interests. Together, our faculty is much greater than the sum of its parts. I encourage each of you to contribute to this synergy in your own way.

I invite you to take full advantage of the graduate student research, leadership, professional development, and social networking opportunities found in the program. Our program has been designed to include physical activity breaks. Please explore the wonders of the town of Canmore and surrounding area.

I extend a sincere thank you to the organizing committee members. Events such as these can't happen without the students who take time away from their own projects/priorities. Their astounding leadership has made the coming days possible.

I hope to see you on site... as well as on the trails,
Norm



Message from the Co-Chairs

Rachel Skow
PERGSS VP ReCon VI

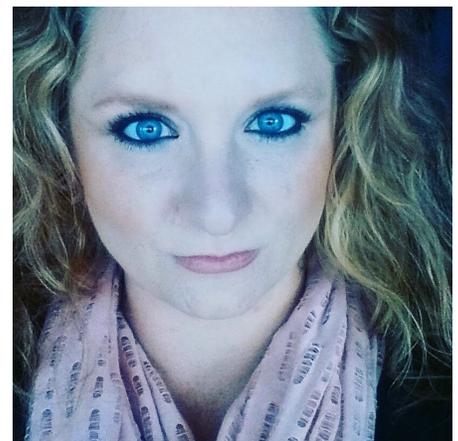
On behalf of the organizing committee, I welcome you to ReCon VI, the Faculty of Physical Education and Recreation's annual graduate student retreat and conference! The theme of ReCon VI is "*choose your own adventure*". This theme will not only be incorporated throughout the weekend in our networking sessions, activities, and professional development, but I also feel it encompasses the spirit of our faculty and of grad school! I am so excited to have been a part of the ReCon VI committee; our goal is to have you enjoy the variety of research presentations, key note talks, professional development, activities, and food we have planned for the weekend! Throughout the weekend, I hope that you to make new companions, appreciate the diverse backgrounds and research within our faculty, partake in fun activities, and leave feeling rejuvenated and excited to take on the semester ahead of you.

I am excited to be in Canmore for ReCon this year! Canmore is not only the place where ReCon began, but it also encompasses so much of what Canada and Alberta have to offer; we are so lucky to have so much nature right in our backyards! Throughout the weekend, we have activities planned to get you out into this amazing environment including meals, physical activity breaks and free time. Our hotel is situated right on the edge of town and has scenic mountain backdrops and is a close walk to all of the amenities of town.

ReCon has become an important forum for graduate student development, leadership, and socialization. An event of this magnitude would not be possible without the support and dedication of many individuals. Please join me in acknowledging and thanking all of the faculty, staff, and students who contribute to the ongoing success of ReCon, including Dean Kerry Mummery, Donna Goodwin (outgoing Associate Dean Graduate), and Normand Boule (incoming Associate Dean Graduate), Nick Holt (Associate Dean Research), John Spence (Vice Dean), Dana Dragon-Smith & Jill Rich (Graduate Program Administrators), and the amazing student organizing committee members – Stephen Busch, Chen Chen, Kimberley Curtin, Colin Deal, Amanda Ebert, Kateline Hladky, Raeleen Hunter, Dong-Woo Kang, Nicholas Kuzik, Heather Larson, Mohadeseh Mahmoudi, Rebecca Marsh, Maxine Myre, Elaine Ori, Kurtis Pankow, and Chelsea Parent. I would also like to thank all other student and faculty members who have helped in various capacities throughout the weekend. Lastly, I would like to thank PERGSS and the USEED campaign team for their fundraising efforts, which have gone towards funding the bus, meals, bike rentals, and reducing students' hotel costs.

Each year ReCon evolves to better meet the needs of graduate students. If you'd like to have an impact on graduate student experiences and be a part of the ReCon VII organizing committee, please connect with myself, or Dr. Normand Boule. Whether you are new to our faculty, new to grad school, or have been in the faculty for many years, we hope ReCon VI has something for you!

Enjoy the weekend!
Rachel



Logistics

Bus Transportation

Edmonton to Canmore

We will be boarding the bus on Friday, September 2nd at **7:45am** in front of the **Jubilee Auditorium** (11455 87 Ave NW, Edmonton, AB T6G 2T2). We will be leaving at **8:00am SHARP!** There will be a 30 minute break in Red Deer. However we suggest that you bring water and snacks for yourself as it will be at least a four hour bus trip to Canmore. The Canmore drop-off location is at the Coast Hotel and Conference Center.

Canmore to Edmonton

The bus will return to Edmonton on Sunday, September 4th from the Coast Hotel and Conference Center. It will load at **4:00pm**, and will leave at **4:15pm SHARP.** Again, there will be a 30 minute break in Red Deer and the drop-off location will be in front of the Jubilee Auditorium.

Registration

Delegates can register between 12:00-2:00pm on Friday September 2nd. Please ensure that you pick up your breakfast tickets, lunch option tickets, and conference dinner ticket for Saturday. These will be required to obtain your choice of meals throughout the weekend. You can also sign up at registration for dinner at Patrino's on Friday night. Those who arrive late can pick up their conference bags from Amanda Ebert or Rebecca Marsh.

The conference registration fee includes:

- Conference sessions for 3 days
- The following meals: Breakfast on Saturday and Sunday, Lunch on Saturday and Sunday, Snacks, Dinner on Saturday
- Bus transportation to and from Canmore, and to group activities such as mountain biking, hiking, and geocaching

Luggage Storage

Please be aware that your room may not be ready when you arrive at the hotel as their check in time is 4:00pm. There will be a storage room where you can leave your luggage until your room becomes available. Similarly on Sunday, the check-out time is 12:00pm. We will have a place for you to store your luggage on this day as well.

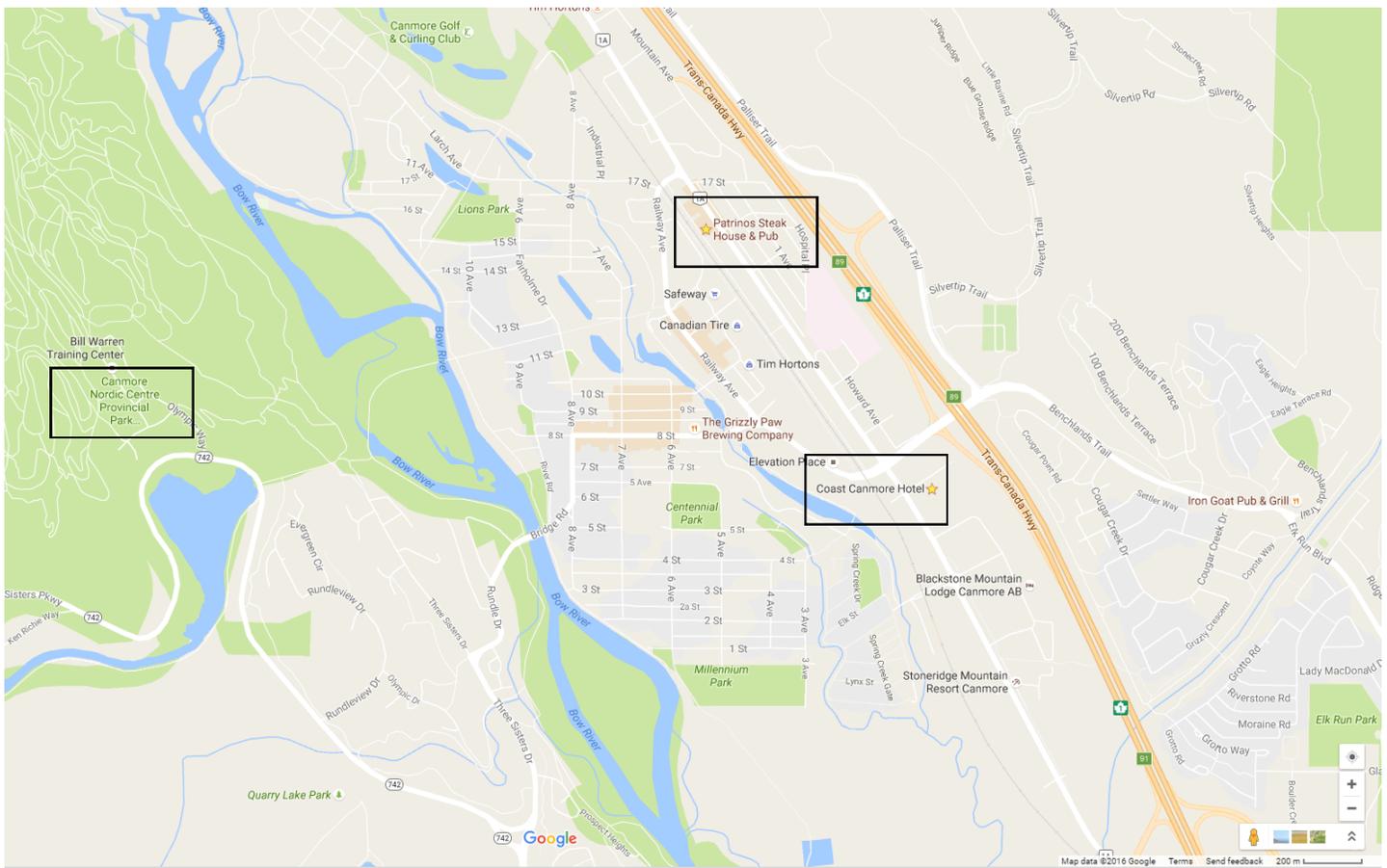
Logistics

Canmore Hotel & Venue

Both the conference and hotel accommodation are situated within the Coast Hotel and Conference Center. The hotel is located along the main street in Canmore and is a short walk from an array of restaurants and shops.

Coast Hotel contact information: 511 Bow Valley Trail
Canmore AB, T1W 1N7
Phone: 403.678.3625

<http://www.coasthotels.com/hotels/ab/canmore/coast-canmore-hotel-and-conference-centre/>



Emergency contact

Rachel Skow Telephone: 1-403-561-9369
Email: rskow@ualberta.ca

Presentation information

Guidelines

Oral Presentations

Standard presentations will be 12 minutes long with 3 minutes for questions and mini presentations will be 3 minutes long with 2 minutes for questions. We will have a laptop available with Microsoft PowerPoint and a laser pointer/slide advancer for you to use for your presentation. You can load your presentation to the laptop during registration. There will be a microphone at the podium. If you have any questions about the oral presentations please email PERGSSReCon@gmail.com.

Posters

There are no size restrictions for the posters, so please feel free to reuse posters that you have already printed for other presentations. If you are printing an original poster, you can use SUBprint, located in the basement of the Students Union Building. Please allow sufficient time for printing (and to fix any errors that can occur). A poster that is 3 feet by 4 feet in size will cost approximately \$30. You can see their website here for more information: <https://www.su.ualberta.ca/businesses/subprint/>. Pushpins will be available, and poster boards will be numbered to indicate where your poster should be located. You can put up your poster upon arrival at the conference venue.

Alternative Presentations

Alternative presentations are also limited to 12 minutes in length, and may include storytelling, dance, drama, film, etc.—anything that falls outside of a traditional oral presentation format. Creativity is encouraged, and we will do our best to accommodate your needs in terms of set-up, if you give us plenty of notice!

Awards

Prizes will be awarded for the best oral and poster presentations. ReCon delegates will vote during each research presentation session and awards winners will be decided based on the majority vote. The awards are based on the following criteria: engagement with the audience, effective communication of ideas, and inclusion of thought provoking discussion. Keep these criteria in mind when developing your presentations.

Previous Winners

2015

Oral presentation — Ewen Lavoie
Poster presentation — Eun-Young Lee

2014

Short oral presentation — Étienne Myette-Coté
Long oral presentation — Matheus Wiest
Poster presentation — Agnes Eek (NSSS Student)

2013

Oral presentation — Vince Tedjasaputra
Poster presentation — Annie Selzler

2012

Oral presentation — Michael Chizewski
Poster presentation — Liam Boyd
Special mentions — Danielle Peers & Lindsay Eales

2011

Oral presentation — Lindsay Eales
Poster presentation — Angela Coppola

Detailed schedule

Friday, September 2

TIME	ITEM & LOCATION	WHO	WHAT
7:45-8:00	Boarding Bus		The bus will load in front of the Northern Alberta Jubilee Auditorium
8:00-12:30	Bus Transportation		On the way to Canmore, the bus will stop in Red Deer for a 30 minute break
12:30-2:00	Registration	Everyone!	Register and pick up conference bad outside the conference rooms of the Coast Hotel and Conference Center
2:00-3:00	Welcome Comments Crocus Ballroom	Normand Boulé Rachel Skow John Spence	Crocus Ballroom Welcoming comments
	Icebreaker	Facilitator: Raeleen Hunter	Ice breaker activity: Choose your own adventure game
3:00-4:00	Alumni Talk Crocus Ballroom	Maria Lynn Introduction: Maxine Myre	Finding Ground
4:00-4:30	Break & Check-In		

Detailed schedule

Friday, September 2

TIME	ITEM & LOCATION	WHO	WHAT
4:30-6:30	Poster Session & Snack Amica Ballroom	Cameron Michael Ehnes (Poster #2)	Effects of Wildland Firefighter Clothing on the Oxygen Cost of Treadmill Walking
	<i>Alcoholic beverages will be available for purchase during the poster session. Alcoholic beverages are approximately \$7.00 each</i>	Devin Brent Phillips (Poster #5)	Are There Sex Differences in the Cardiopulmonary Response to Graded Exercise with Heavy Load Carriage?
		Heather Larson (Poster #4)	You Can't Always Get What You Want: Motives and Gains of New Exercisers
		Jeffrey Sawalha (Poster #9)	The Signal for News
		Jennifer Bertrand (Poster #7)	Brain waves and decision-making: Discrimination decisions and naturally occurring alpha oscillations
		Jordan Rees (Poster #1)	Exercise Physical Activity Diabetes Glucose Monitoring (E-PARaDiGM) Protocol: A Multi Site Study (Poster #
		Kassi Boyd (Poster #6)	Dignity in Leisure: The Story of a Family Experiencing Autism
		Kimberley Curtin (Poster #10)	Investigating Relationships Between Ancestry, Preventative Behaviours, and Perceptions of Heart Disease and Breast Cancer
		Maxine Myre (Poster #11)	Weight bias as a barrier to physical activity
		Minh John Luu (Poster #3)	Decreased neural excitability contributes to "fatigue" of electrically-evoked muscle contractions
Raeleen Hunter (Poster #12)		One sprinter's return from shin splints: More than just science	
Sydney Schmidt (Poster # 13)	Measuring the medial longitudinal arch: Building a classification system		
Ran Zheng (Poster #8)	Perceptual motor integration in a prediction motion task		
6:30-6:45	Break		
7:00	Dinner		Reservations have been made at Patrino's in Canmore, 1602 Bow Valley Trail. Delegates are responsible for paying for their own dinner. Please note, an 18% gratuity will be automatically added to the bill. We will be leaving the hotel lobby to walk to the restaurant at 6:45. The restaurant is approximately a 15 minute walk from the Coast Hotel and is fully accessible.

Detailed schedule

Saturday, September 3

TIME	ITEM & LOCATION	WHO	WHAT
8:00-9:00	Breakfast Amica Ballroom	Everyone!	Hot breakfast, included with registration
9:00-9:45	Research Presentations Crocus Ballroom	Emily Ainsley	Contraction fatigue associated with three types of neuromuscular electrical stimulation delivered to produce a range of contraction amplitudes
		Vincent Tedjasaputra	Intrapulmonary arteriovenous anastomoses are detected following full recruitment of pulmonary capillaries during exercise
		Liane Jean	Progression for squat exercise – Alternative-style presentation
9:45-10:00	Break		
10:00-11:00	Rod Murray Address Crocus Ballroom	Lindsay Eales Introduction: Donna Goodwin	The Mad Dance of Grad School: A Choose Your Own Adventure
11:00-11:15	Break		
11:15-12:00	Research Presentations Crocus Ballroom	Rebecca Marsh & Amanda Ebert	The Hidden Labour of Pursuing Physical Activity for Youth Experiencing Disability and Their Parents
		Mohadeseh Mahmoudi	Place Attachment, Urban Open Spaces, and Leisure Behaviour: A Review
		Michael Dubnewick	Wandering in and Wondering alongside: Stories of relationship building with marginalized and inner city Indigenous peoples in community and garden places

Detailed schedule

Saturday, September 3

TIME	ITEM & LOCATION	WHO	WHAT
12:00	Lunch Amica Ballroom	Everyone!	Grab-and-go lunch, included with registration Please remember your sandwich choice and choose that one!
12:30	Transportation to outdoor activity		Delegates participating in the mountain biking activity will be dropped off at the Nordic Center Delegates participating in the hike will be dropped off at the Goat Creek Trail
3:30	End of activity		The bus will pick up hikers at the trailhead, then head to the Nordic Center to pick up mountain bikers
4:00	Bus returns from activities		Bus arrives at the Coast hotel
5:00-6:30	Professional Development Crocus Ballroom	Keynote: Nancy Spencer-Cavaliere	Communicating Across Silos: Interdisciplinary Conversations Part I - Faculty Perspectives
6:30-7:00	Networking activity Crocus Ballroom	Facilitator: Raeleen Hunter	Choose your own adventure – day 2
7:00	Dinner at hotel Amica Ballroom		The dinner is included with registration. However, delegates are responsible for alcoholic beverages and these will be pay-as-you-go.= Guests must pre-purchase tickets for this dinner for \$33.00

Detailed schedule

Sunday, September 4

TIME	ITEM & LOCATION	WHO	WHAT
8:00-9:00	Breakfast Amica Ballroom	Everyone!	Hot breakfast, included with registration
9:00-11:00	Activity: Geocaching	Everyone! Facilitators: Maxine Myre & Rachel Skow	We will begin in the lobby of the Coast Hotel. Please bring footwear for walking outdoors and clothing appropriate for the weather. The bus will arrive at the final destination at 10:15 to pick up the teams
11:00-11:30	Break & Check-Out		
11:30-12:15	Research Presentations Crocus Ballroom	Ewen Lavoie	Establishing normative eye-movement patterns in functional tasks
		Nathan Wispinski	How choices evolve: Evidence from the brain and the hand
		Aida Valevicius	Comparative Upper Body Kinematics of Prosthetic Users During Two Functional Tasks
12:15-1:00	Lunch Amica Ballroom	Everyone!	Hot lunch, included with registration Please remember your burger choice and choose that one!

Detailed schedule

Sunday, September 4

TIME	ITEM & LOCATION	WHO	WHAT
1:00-2:30	Professional Development Crocus Ballroom	Panel members: Shintaro Kono Vince Tedjasaputra Kelsie Action Annie Selzler Jodie Stearns Scott Adams	Communicating Across Silos: Interdisciplinary Conversations Part II - Student Perspectives
2:30-2:45	Break		
2:45-3:30	Research Presentations Crocus Ballroom	Torstein Eriksen Dæhlin Jodie Stearns Cameron Michael Ehnes Jane Hurly	Two-dimensional video analyses for coaches: Examples from weightlifting The role of negative peer experiences in the physical activity and screen time of youth: A cross-sectional study Effects of Wildland Firefighter Clothing Ensemble on Pack Test Performance – 3 Minute Presentation "When you see nature, nature give you something": The role of nature-based leisure in refugee integration in Canada – 3 Minute Presentation
3:30-4:00	Closing remarks & Awards Crocus Ballroom	Normand Boulé Rachel Skow John Spence	Closing comments & awards
4:00-4:15	Bus loading		The bus will load in front of the Coast Hotel
4:15 – 8:45	Bus Transportation		On the way to Edmonton, the bus will stop in Red Deer for a 30 minute break. The bus will drop off at the Jubilee Auditorium parking lot

Alumni Talk

Friday, September 2

3:00-4:00 PM

Presenter

Maria Lynn

MA University of Alberta

Senior Parks Planner

Kananaskis Region, Alberta Parks

Finding Ground

It goes without saying that at some point during graduate studies we ask ourselves, *“what will I do with my Master’s or Doctorate?”* or *“where can I go with this?”* At the same time and without hesitation, everyone from our parents and partners to random strangers asks us *“what are you going to do with that?”* Join me as I share my graduate student and career experiences, personal insights, lessons learned, and thoughts on the application of graduate studies to navigating a path that is right for you. During this presentation you will be asked to challenge yourself to explore the multitude of ways in which we can ‘find ground’ in the academic and non-academic worlds.

Biography

Maria holds a Master of Arts in Recreation and Leisure Studies and a Bachelor of Arts in Recreation, Sport, and Tourism, both from the University of Alberta. During her graduate studies she was awarded the U of A Master’s Scholarship, the SSHRC Joseph-Armand Bombadier Canada Graduate Scholarship, the Walter H Johns Graduate Fellowship, and the Alberta Advanced Education Graduate Student Scholarship. Recently, Maria was also awarded the Travel and Tourism Research Association DMAC Graduate Researcher Award. In addition to these honours, Maria was involved in academic student life as the GSA representative for the Physical Education and Recreation Graduate Student Society, a guest lecturer in RLS 100, 263, 500 and PEDS 201, and had the sincere opportunity of representing students at the National Recreation Summit. Both of Maria’s degrees have been pivotal in providing the foundation for a successful professional career that bridges the areas of parks, tourism, sport, and recreation.

Maria has been with the Alberta Provincial Government since 2008. She started as a Policy and Land Use Planner with Alberta Parks in Edmonton, before moving over to the Tourism Division in Visitor Services and Tourism Product Development. It was only a few years in between before Maria returned to Alberta Parks in the position of Ministry Consultation and Engagement Advisor. In fall 2014, Maria moved to Canmore to take on the position of Senior Parks Planner for the Kananaskis Region. Her favourite thing about parks is all the unique, incredible, and unsuspecting places you can discover such as the awe-inspiring view scape at the top of a climb, the solitude of a remote site, a glimpse of wildlife, or a rare geological feature. Maria’s work as a planner contributes to these amazing places by providing the planning processes, critical thinking, and people skills to guide decision-making.

Maria continues to live amidst the mountains in Canmore, realizing her dreams of a life connected to nature, community, and to pursuing skiing, climbing, hiking, and mountain biking. Maria also loves to canoe, crochet, travel a far, and recently, has picked up the surfing fever! Family, friends, and the simply joys in life are her beacon to staying grounded in what she will attest is a very busy, constantly changing and incredibly complex region.



Rod Murray Address

Saturday, September 3

10:00-11:00 AM

Presenter

Lindsay Eales

PhD Candidate

The Mad Dance of Grad School: A Choose Your Own Adventure

Weaving dance, performance, theory and personal experience, in this presentation I will grapple with madness at grad school. Within our graduate careers the vast majority of us will encounter mental illness, in our own lives or in the lives of those we care about. I want to explore how to navigate graduate school while experiencing madness, and how best to support others. I also want to celebrate how mental illness can be generative of community, creative living and quality of life. Through this 'Choose Your Own Adventure' performance, I hope to offer some thoughts, tools, and embodied experiences that honour Rod Murray's legacy as a passionate thinker, instructor, and activist.

Biography

Lindsay Eales is a PhD candidate and Vanier scholar (SSHRC) in the Faculty of Physical Education and Recreation. She is also the co-artistic director of CRIPSiE (the Collaborative Radically Integrated Performers Society in Edmonton), the programming director for Solidance Inclusive Recreation Society, and a certified occupational therapist. She has instructed, choreographed and performed integrated dance for 10 years. Lindsay's artistic work has been a part of numerous local, provincial and national performance festivals. Her Masters' research focused on practices and performances of social justice in integrated dance (dance by and for people experiencing disability as well as their artistic and political allies). Her current research focuses on using dance as a research method for exploring mad politics, aesthetics, and mad-accessible movement practices. Her work has been published in journals such as *Adapted Physical Activity Quarterly*, *Emotion, Space and Society*, and *Leisure/Loisir*. Lindsay is honoured and excited to be giving the Rod Murray Memorial Address at RECON VI.

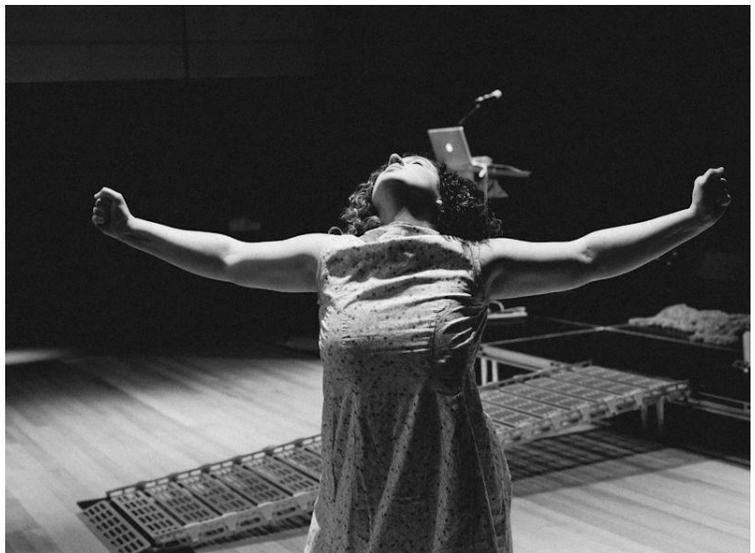


Photo credit: Magdalena Olszanowski

Professional Development

Saturday, September 3

5:00-6:00 PM

Communicating Across Silos: Interdisciplinary Conversations Part I - Faculty Perspectives

Dr. Nancy Spencer-Cavaliere introduces the concept of "interdisciplinary communications" and what it means in the context of "Phys Ed and Rec". Dr. Spencer-Cavaliere, along with invited faculty members, will use this session to establish a foundation for creating interdisciplinary conversations in research and will be expanded on in the PD session Part II.

Keynote Speaker

Nancy Spencer-Cavaliere (PhD) is an Associate Professor in the Faculty of Physical Education and Recreation (PER) at the University of Alberta. Her research and teaching interests are primarily in the areas of Active Healthy Children and Adapted Physical Activity. Through the exploration of participant experiences, she seeks to understand meaningful engagement in play, sport, and physical activity for all children and youth, and in particular those who experience disability. She is also actively engaged in community based research that seeks to bridge academic and community practice. At ReCon she will share some of the challenges and potentials of interdisciplinary research, while integrating her own experiences as a former PER graduate student and faculty member.

Sunday, September 4

1:00-2:30 PM

Communicating Across Silos: Interdisciplinary Conversations Part II - Student Perspectives

Building on the PD session Part I, this session will emphasize senior graduate students' interdisciplinary conversations including sharing past experiences in grant and scholarship applications, committee formation, candidacy exams and thesis defense, teaching experiences, job hunting and post-graduate professional careers, knowledge dissemination at conferences, and more.

Professional Development

Sunday, September 4

1:00-2:30 PM

Panelists

Shintaro (Shin) Kono is a 4th-year PhD candidate in the Faculty under the supervision of Dr. Gordon Walker. He is one of the interdisciplinarity professional development session organizers. He has studied the relationship between well-being and leisure experiences from both social psychological and sociological perspectives. Outside of research, he taught a social psychological course while serving as an executive board member for a sociological academic association. Moreover, he writes broadly: empirical studies both qualitative and quantitative, theoretical work, literature review, and philosophical piece. In this ReCon, he hopes to share his interdisciplinary experiences--both success and failure--with other students.

Vince Tedjasaputra is a 6th year PhD Candidate in Exercise Physiology. As a member of the Clinical Physiology Laboratory, he studies pulmonary gas exchange during exercise in health and clinical populations. He believes that interdisciplinary conversations are the key to expanding professional and personal networks. Outside of academia, Vince is the national anthem singer for the University of Alberta Athletics, also having sung for the 2016 Canadian Track and Field Olympic Trials, and will perform for the Edmonton Eskimos this fall. He plans to highlight how his musical pursuits have opened doors for collaborative and multidisciplinary research.

Kelsie Acton is entering her 4th year of the PhD program in the Faculty of Physical Education and Recreation and is supervised by Dr. Donna Goodwin. As Co-Artistic Director of CRIPSiE, her research on integrated dance is driven and informed by her commitment to the practical work of choreographing, dancing and teaching with diverse minds and bodies. She holds multiple artistic and academic grants and awards, including a SSHRC doctoral fellowship.

Anne-Marie (Annie) Selzler is a 5th year PhD student in the Exercise Psychology Laboratory in the Faculty of Physical Education and Recreation under the supervision of Dr. Wendy Rodgers. She has expertise in the area of health psychology and statistical analysis. Her research focuses on the determinants of physical activity and functional outcomes among adults with chronic diseases, with a special interest in chronic obstructive pulmonary disease. The objectives of her research are to (i) advance the understanding of psychosocial theories of health behaviours, and (ii) to examine and apply theoretical principles within clinical settings with the aim of improving behaviour change efforts.

Jodie Stearns is a 5th year PhD student studying health psychology with Dr. John Spence. Her interests are in the correlates and determinants of physical activity, sedentary behavior, and screen time in children and adolescents. She was a PERGSS member from 2010-2014 and served as the ReCon co-chair and PERGSS vice president (ReCon) in 2013 and 2014. She has had some interdisciplinary experiences in research, teaching and writing and defending candidacy exams.

Scott Adams is a PhD Candidate within the Behavioural Medicine Laboratory of Dr. Kerry Courneya. His doctoral research involves assessing the impact of high-intensity aerobic interval training on the novel and traditional surrogate markers of cardiovascular health in testicular cancer survivors. Prior to starting at the U of A, from 2008 to 2013, Scott co-lead the development of Canada's first hospital-based cancer rehabilitation and exercise program at the Segal Cancer Centre of the Jewish General Hospital (Montreal, QC). During this time he worked as i) the senior Exercise Physiologist within the McGill Adolescent and Young Adult Oncology Program and the Hemato-Oncology tumor group, ii) the Young Adult Program Coordinator for Hope & Cope, and iii) the Founder/Director of a young adult support website called CancerFightClub.com. Scott received his Bachelor's and Master's degrees in Clinical Exercise Physiology at Concordia University (Montreal, Quebec). His Master's research focused on the impact of cancer and chemotherapy on autonomic nervous system function and cardiovascular reactivity in young adults with cancer. Scott will be leaving the U of A next July to begin a postdoctorate position at Memorial Sloan Kettering Cancer Center (New York, NY).

Activities

Saturday, September 3

Mountain Biking

Developed for the 1988 Winter Olympic Games Nordic events, the Canmore Nordic Centre Provincial Park remains a world-class facility. Enjoy some of the best x-country mountain biking in the Canadian Rockies on more than 100 kilometres of single- and double-track trails. Wide dirt roads allow leisurely rides to scenic lookouts, while cross-country ski trails offer more of a challenge on rolling terrain. Advanced riders will enjoy the large number of single-track trails winding their way throughout the Centre, while beginners and families can take a spin on the gravel trails taking you to wide open meadows showcasing the surrounding mountains.



Details:

Bike rentals could be purchased ahead of time for just \$20. If you have not rented a bike, there may still be bikes available to rent, please see Rachel immediately if you need to rent a bike! If you have brought your own bike, we would advise you to drive to the Nordic Center with your bike! We can transport bikes under the bus (in the luggage storage) at your own risk if you choose to do so.

If you have rented a mountain bike, please meet Rachel at Trail Sports to pick up your bike and helmet. All mountain bikers will meet with their bikes at 1:30pm outside of Trail Sports. There will be two groups, a beginner group and an intermediate group! Please check in with the group leaders! You will have two hours to ride before returning to Trail sports and waiting for the bus to take you back to the hotel!

Hiking

A scenic trail on the west-side of Mount Rundle. You can expect to cross mountain streams, see wildlife, and navigate gravel and dirt trails as you explore the Rocky Mountains! The views along this trail are breathtaking. The trail meanders along-side Goat Creek and majestic peaks loom above you one both sides of the trail. The trail is moderately steep in parts with sharp curves and foot bridges sometimes suddenly before you. There are signpost markers all along the trail.

Details:

Hikers should stay on the bus at the Nordic center; the bus will be continuing on to Goat Creek Trail! You should arrive by 1:15pm. From here, you will hike as much of Goat Creek Trail as you can/want in 1 hour and turn around and hike back out! This trail leads all the way to Banff if you keep going, so please remember to watch the time. Please also be careful of mountain bikers who may be sharing the trail. The bus will leave the trailhead back to the Nordic Center at 3:30pm.



Activities

Sunday, September 4

Geocaching

Geocaching is an outdoor recreational activity, in which participants use a Global Positioning System (GPS) receiver or mobile device and other navigational techniques to hide and seek containers, called "geocaches" or "caches", at specific locations marked by coordinates all over the world.

A typical cache is a small waterproof container containing a logbook (with a pen or pencil). The geocacher enters the date they found it and signs it with their established code name. After signing the log, the cache must be placed back exactly where the person found it. Larger containers such as plastic storage containers (Tupperware or similar) or ammunition boxes can also contain items for trading, such as toys or trinkets, usually of more sentimental worth than financial.



Details:

Meet in the lobby at 9:00am to head out in teams as you explore your way from the hotel, through the town of Canmore, and the mountains, along the way to the Nordic center. Solve clues and seek out coordinates using a GPS to get you from one station to the next along the way to the geo-cache at the end! The bus will arrive at the Nordic center at 10:15am to pick up the teams!

Abstracts

Poster presentations

Presenter

Cameron Michael Ehnes

Authors

C.M. EHNES

D.B. PHILLIPS

B.G. WELCH

L.N. LEE

I. SIMIN

S.R. PETERSEN

Effects of Wildland Firefighter Clothing on the Oxygen Cost of Treadmill Walking

The purpose of this experiment was to document the effects of wildland firefighter clothing on the oxygen cost of treadmill walking at a standardized speed and grade. Twelve male and 10 female participants (age, 26 ± 6 ; stature, 174.5 ± 8.8 cm; mass, 75.4 ± 15.9 kg; $\dot{V}O_{2peak}$, 45.0 ± 7.1 mL·kg⁻¹·min⁻¹) completed four randomly-ordered exercise bouts within a single session. Each exercise bout consisted of 10 min of treadmill walking at 1.56 m·s⁻¹ and 1.5% grade. Exercise bouts were bracketed by brief standardized warm-up and cool-down periods and were separated by 10 min of rest. The conditions were: unloaded and loaded with exercise clothing (U-EX and L-EX) and unloaded and loaded with work clothing (U-W and L-W). Exercise clothing included t-shirt, running shoes and shorts while the work condition added boots and coveralls. In loaded conditions subjects carried a properly sized and fitted backpack weighing 20.5 kg. Oxygen uptake ($\dot{V}O_2$) was significantly higher in U-W compared to U-EX (1451 ± 64 vs 1288 ± 62 mL·min⁻¹, respectively). In L-W, $\dot{V}O_2$ was significantly higher compared to L-EX (1825 ± 71 vs 1626 ± 67 mL·min⁻¹, respectively). When normalized to total mass (body mass + clothing + pack mass), $\dot{V}O_2$ was significantly higher in U-W compared to U-EX (19.1 ± 0.5 vs 17.3 ± 0.4 mL·kg⁻¹·min⁻¹, respectively). In L-W, $\dot{V}O_2$ normalized to total mass was significantly higher compared to L-EX (19.0 ± 0.5 vs 17.1 ± 0.5 mL·kg⁻¹·min⁻¹, respectively). Although the work boots and coveralls only added 2.3 ± 0.2 kg of additional load carriage, substantial increases in the oxygen cost of treadmill walking were observed. The additional oxygen cost in both W conditions could not be explained by increased mass alone. We suggest that the alterations in energy requirement result from at least three factors including: increased mass; mass location; and, the interaction of clothing layers. These results provide evidence for the requirement of occupationally-relevant clothing ensembles when assessing physiological readiness for work.

Presenter

Devin Brent Phillips

Authors

DEVIN B PHILLIPS
CAMERON M EHNES
MICHAEL K STICKLAND
STEWART R PETERSEN**Are There Sex Differences in the Cardiopulmonary Response to Graded Exercise with Heavy Load Carriage?**

The purpose of this study was to compare the effects of heavy load carriage on the cardiopulmonary response to graded exercise in males and females. Nine males and 9 height-matched females completed, in random order graded treadmill tests in two conditions: unloaded with exercise clothing (UL) and loaded (L) which included exercise clothing plus coveralls, work boots and a 20.5 kg pack. Modified Balke treadmill tests were completed walking at 1.56 m.s⁻¹ and grade was increased by 2% grade every 2 min until exhaustion. In both conditions, males had greater ($p < 0.05$) peak oxygen uptake ($\dot{V}O_{2peak}$), minute ventilation ($\dot{V}E_{peak}$), and test duration compared to females. Load carriage and work clothing did not alter $\dot{V}O_{2peak}$ and $\dot{V}E_{peak}$ for either group. Furthermore, the components of ventilation (e.g., breathing pattern, operating lung volume, partial pressure of end-tidal carbon dioxide) were similar between conditions and within groups. Test duration in L was reduced ($p < 0.05$) by the same magnitude for both males and females (males, $37 \pm 2\%$; females, $40 \pm 2\%$). At peak exercise, perceived exertion and breathing stress responses were similar between conditions and groups. The response patterns for oxygen uptake ($\dot{V}O_2$) and minute ventilation ($\dot{V}E$) were similar for both groups in both conditions although males had higher $\dot{V}O_2$ and $\dot{V}E$ at 50, 60, 70 and 80% of $\dot{V}O_{2peak}$. There were no differences in the submaximal $\dot{V}O_2$ and $\dot{V}E$ responses between unloaded and loaded conditions within either group. Operating lung volumes were slightly reduced for both groups under load (decreased end-inspired and expired lung volume), but there was no evidence of a compensatory change in breathing pattern or increased perceived exercise or breathing stress. The results demonstrated that although females had lower $\dot{V}O_{2peak}$, $\dot{V}E_{peak}$ and test duration, the physiological and perceptual responses to exercise during heavy load carriage were similar in males and females.

Presenter

Heather Larson

Authors

HEATHER K. LARSON
KIMBERLEY MCFADDEN
TARA-LEIGH F. MCHUGH
TANYA R. BERRY
WENDY M. RODGERS

You Can't Always Get What You Want: Motives and Gains of New Exercisers

Within the framework of self-determination theory (Deci & Ryan, 1985), participatory motives represent what people hope to achieve or avoid through engaging in a specific behavior. Gains represent their actual outcomes. A qualitative description approach was used to retrospectively explore the participatory motives and corresponding gains of adults who completed a year-long exercise program, as well as their adherence to exercise after the program ended. Semi-structured interviews were conducted with 10 female and 8 male participants ($M = 49.9$ years, $SD = 10$). Transcripts were subjected to content analysis and three primary themes emerged. First, shifting focus from weight and appearance to quality of life and improved health involved participatory motives for exercise without corresponding gains, as well as unexpected gains in other areas that led to new motives, resulting in a shift in focus from more controlled motives to more autonomous motives. Second, education and confidence comprised a common motive for participating in the program (learning to exercise safely and effectively in a gym setting) that was accompanied by increased perceived competence and confidence. Third, accountability/self-generated obligation to exercise for others represented a very important participatory motive and gain that were tied to the study. Participants hoped that a year of regular, structured exercise, would translate into long-term exercise adherence, but when the program finished, they experienced dramatic decreases in their exercise frequency and intensity. It appears that it was difficult to replace the sense of obligation provided by the study with a more sustainable motive for exercise.

Presenter

Jeffrey Sawalha

Authors

JEFFREY M. SAWALHA
NATHAN J. WISPINSKI
SAMANTHA HO
MARCIA L. SPETCH
CRAIG S. CHAPMAN

The Signal for News

Surprisingly, pigeons have been shown to sacrifice real rewards (e.g. food) to get more information when making choices in a delay decision task. For instance, when given a choice between an option which offers a reward 100% of the time after a delay (e.g. 10 s), but does not reveal information about that reward (unsigned; when pecked, target stays the same color) versus an option that gives rewards only 50% of the time after the same delay but WILL give information about the reward (signalled; when pecked it changes red / green to indicate no reward / reward), the pigeons prefer the 50%, signalled option. However, when the information is not immediate (e.g. it takes a few seconds after the peck for the color change to occur) the pigeon no longer prefers the 50% option and now almost exclusively chooses the 100% option. This suggests that for pigeons, there is value in information, but only when it is received in close temporal proximity to the event that caused the information to be revealed. Here we seek to extend this work to humans. We believe humans may also value information about rewards or outcomes, perhaps more so than the rewards themselves, but only when it is received quickly. After all, knowing information about a reward may be seen as a valuable commodity for humans and pigeons alike, since it can improve prediction and reduce uncertainty. We will adapt the pigeon decision task to see if humans prefer information of potential rewards over unsigned, but guaranteed rewards. Furthermore, we will investigate if inserting a delay before receiving informative cues affects humans the same way as pigeons. We predict human decisions will mimic pigeon decisions with people putting a clear value on information, but only when it occurs without a delay.

Presenter

Jennifer Bertrand

Authors

JENNIFER K BERTRAND
NATHAN J WISPINSKI
KYLE E MATHEWSON
ANTHONY SINGHAL
CRAIG S CHAPMAN

Brain waves and decision-making: Discrimination decisions and naturally occurring alpha oscillations

When deciding which of two things is brighter, how is this discrimination decision influenced by naturally occurring brain waves? Recent work (Mathewson et al., 2009) has shown that the power (amplitude of an oscillation) and phase (where it is in the wavelength) of endogenous alpha oscillatory activity (~10Hz) affect detection decisions, changing when a stimulus is consciously reported. Specifically, when alpha oscillatory activity has high power, the phase of the oscillatory activity can predict visual awareness. While alpha oscillatory activity has been shown to influence detection decisions, it is unclear how phase and power interact when discriminating between two stimuli - like deciding which of two stimuli are brighter. Further, it is unknown how phase and power differences between the left and right brain hemispheres might be responsible for discriminating between stimuli on different sides of visual space (hemifields). Here, we propose to use electroencephalography (EEG) and behavioural analysis to investigate how endogenous alpha oscillatory activity affects a brightness discrimination task, and how hemispheric differences may be responsible for this biased perception.

Participants will be shown two grey circles, which flash very briefly (8ms) on either side of a fixation cross. Each stimulus is either lighter or darker, with the 2 brightness levels determined by a staircase procedure to approximate when a participant perceives one stimulus as lighter 60% of the time. Participants make a keyboard response about which stimulus they perceive as lighter (or darker, counterbalanced) immediately after the stimuli presentation. We predict that naturally occurring phase and power differences between brain hemispheres will result in biased brightness discrimination between visual hemifields. It is our belief that uncovering how these neural oscillations affect perceptual judgements will extend and further our understanding of higher order value-based judgements.

Presenter

Jordan Rees

Authors

JORDAN REES

JANE YARDLEY

CARLA PRADO

JONATHAN LITTLE

NORMAND BOULE

Exercise Physical Activity Diabetes Glucose Monitoring (E-PARA DiGM) Protocol: A Multi Site Study

Background: Researchers often rely on measures such as glycated hemoglobin to characterize the effects of exercise on glycemic control in people with type 2 diabetes (T2D). Although a useful measure, its ability to assess glucose variability in free-living conditions and acute responses to exercise is limited. The emergence of continuous glucose monitors (CGM) has enabled researchers to measure average glucose concentrations every five minutes for several consecutive days in a variety of laboratory-based or free-living settings. Previous exercise studies utilizing CGM have differed in regards to type and timing of exercise, meal composition, and outcome measurements. Furthermore, small sample sizes were often used in these studies making it challenging to compare inter-individual differences in responses. The Exercise -Physical Activity Diabetes Glucose Monitoring (E-PARA DiGM) Protocol has been developed to provide a standardized comparison in exercise studies. It is being piloted in 7 sites across Canada.

Objectives: 1) To examine a single bout of walking on glucose levels and glycemic variability as assessed by a CGM in individuals with T2D. 2) To examine sex-specific differences in glycemic control in the 24 hours following a single bout of walking.

Methodology: Twelve individuals with T2D will be recruited at the University of Alberta site. The 6-day protocol includes exercise and control conditions which are completed in a randomized, crossover design. The exercise condition consists of 50 minutes of walking at a pace of 5.0km/hr and a grade of 0.5% (~3.5 metabolic equivalents). During the exercise and control conditions all meals and snacks are standardized and provided to participants. Data from the CGM will be compared between the 24-hour periods, which follow each intervention (exercise vs. control). In addition to the lessons learned from developing and setting-up this multi-site study, we will share the results from the first participants.

Presenter

Kassi Boyd

Authors

KASSI A BOYD

DONNA L GOODWIN

Dignity in Leisure: The Story of a Family Experiencing Autism

Research Context: Dignity is a fundamentally human state of being that encompasses feelings of self-worth, deserving of the respect from others, and belonging to each individual subject. These feelings can be shattered by the cruel acts of others and can result in humiliation or embarrassment. Researchers have shown that children with impairments, and their families, experience stranger-imposed indignities in public settings. Consequently, family leisure, which is an important component of family life, can be difficult and effortful. Little is known about how dignity is experienced and negotiated during community leisure by families with a child with autism.

Research Question: How is dignity experienced by a family with a child with autism as they engage in community-based family leisure?

Method: An interpretative phenomenological case study will be completed (Yin, 2014; Smith, Flowers, Larkin, 2009). Data will be collected through semi-structured, audio-recorded interviews, observations, conversational interviews, and field notes. Interviews will be transcribed verbatim and all data will be subjected to thematic data analysis (Smith et al., 2009). The conceptual framework of relational ethics (Bergum & Dossetor, 2005) will facilitate the interpretation of the findings.

Contributions to Knowledge: Gaining insight into how (in)dignity is experienced by families has the potential to open dialogue among families with young children with autism, service providers in the sectors of leisure and recreation, researchers, and the wider community about the importance of dignity and its impact on participation in leisure.

Presenter

Kimberley Curtin

Authors

KIMBERLEY D CURTIN
TANYA R BERRY
KERRY S COURNEYA
COLLEEN M NORRIS
JOHN C SPENCE

Investigating Relationships Between Ancestry, Preventative Behaviours, and Perceptions of Heart Disease and Breast Cancer

Women believe breast cancer is more severe and is less controllable than heart disease despite the higher mortality rate for the latter in Canada for women. Perceptions of heart disease and breast cancer tend to vary depending by ancestry. These disease perceptions are extremely relevant for lifestyle change and preventative action. This study examined Canadian women with South Asian (n = 170), East or South East Asian (n = 188), British (n = 373), and Western European (n = 169) ancestry (Mage = 37.22, SD = 13.55). Perceptions of ability to reduce risk for breast cancer/heart disease, and control over getting the diseases were measured along with lifestyle behaviours (smoking, fruit and vegetable consumption, leisure time physical activity). In the heart disease models, fruit and vegetable consumption was related to perceptions of ability to reduce risk of heart disease for all ethnicity groups except East or South East Asians. Age and physical activity were related to perceptions of control and ability to reduce risk in women of British ancestry. In the breast cancer models, fruit and vegetable consumption was related to perceptions of ability to reduce risk and control for all the ancestry groups except for Western Europeans for which only physical activity was related to perceptions of ability to reduce risk of breast cancer. Despite the importance of physical activity in disease prevention, it appears to be less important in perceptions of ability to reduce risk and control over getting the diseases, especially for those of Asian descent.

Presenter

Maxine Myre

Authors

MAXINE MYRE

TANYA R BERRY

Weight bias as a barrier to physical activity

There are many barriers to engaging in physical activity that even the most dedicated exercisers face. These include not enough time, limited access to facilities or equipment, lack of motivation or confidence. Individuals living with obesity may face these barriers and more. Those living with obesity report feelings of shame or embarrassment, a large emphasis on weight loss, previous negative experiences with physical activity, and experiencing weight stigma as reasons for avoiding physical activity altogether.

Unfortunately, in today's society negative obesity and fitness stereotypes are widespread. Addressing obesity and fitness stereotypes is important because we know that engaging in physical activity leads to many health benefits for individuals of any size. It is also necessary to reduce weight stigma in general because the consequences on health and well-being can be significant. Weight stigma is known to exist in multiple settings (e.g., employment, health care, education) and can impact an individual's self-esteem and body image, eating and physical activity behaviours, and physical health.

This poster will review the literature related to the effect of weight stigma on physical activity from the perspective of individuals living with obesity. Additionally, it will identify avenues for future research and highlight specific research questions.

Presenter

Minh John Luu

Authors

M JOHN LUU

KELVIN E JONES

DAVID F COLLINS

Decreased neural excitability contributes to "fatigue" of electrically-evoked muscle contractions

Introduction: There are numerous benefits in using electrical stimulation (ES) as a rehabilitation tool. Unfortunately, these benefits are limited by the rapid decreases in force output (fatigue). Recently it has been suggested that fatigue develops during ES, in part, because the excitability of axons under the stimulating electrodes decreases, causing fewer muscle fibres to be recruited and the torque declines. When this occurs, the stimulation intensity required to activate the nerve to produce a given contraction amplitude progressively increases. The present study was undertaken to determine how decreased axonal excitability contributes to contraction fatigue when stimulating at different ES frequencies.

Methods: Seven healthy participants took part in this study. ES was delivered at 20, 40, and 60 Hz to the common peroneal nerve to generate 480 contractions of tibialis anterior (TA) over 8 minutes. Contraction fatigue was quantified by the decline in torque produced by the muscle over time. Decreases in axonal excitability were measured as increases in the stimulation intensity required to reach a target potential. Stimulation intensity was recorded every second, before and during the 8 min of ES. Correlations were done to compare the decrease in excitability with decreases in torque.

Results: Results show that there was a decrease in axonal excitability during ES, and this change was larger and developed faster at higher stimulation frequencies. Contraction fatigue was strongly predicted by changes in axonal excitability at all frequencies and was frequency dependent.

Conclusion: Decreased axonal excitability plays a role in ES-induced contraction fatigue and the magnitude and time course are frequency dependent. The next step would be to measure changes in the maximal muscle force output to determine the integrity of the muscular contractile elements.

Presenter

Raeleen Hunter

Authors

RAELEEN N HUNTER

One sprinter's return from shin splints: More than just science

Sport is a socially driven environment that is latent with scientific approaches and quantitative assessments. In most cases scientific approaches and measurable tools are very productive but often in the pursuit of efficiency, social factors can be overlooked as contributing to the problems in sport. Together, social theory and sport science can offer a more holistic perspective on the origins of a sports injury and how a coach may redesign the program for greater success.

In track and field, injuries are often normalized so that they seem to be a natural part of sport. Questioning whether this should be true for every injury, I want to explain how, in the case of my practicum, the athlete's injuries could be traced back to details within the coach's programming. In this presentation I intend to show how I combined both social theory and sport science to overcome an athlete's injury.

I will begin the presentation by explaining how Ralph Mann, a prolific American sprint coach, identifies athletes' limiting factors to effectively approach their training. I will explain how I used Mann's limiting factors to identify the risk factors that led to one sprinter's injury, shin splints, and show how I used Foucauldian social theory to further pin down the problem. Using Foucauldian social theory I will explain how I made small changes to the athlete's programming to affect the change the athlete needed to train and compete pain free.

In my practicum experience, including social theory as an additional perspective to problematize the athlete's injury allowed me to be a more effective and ethical coach.

Presenter

Sydney Schmidt

Authors

SYDNEY M. SCHMIDT
LOREN Z. F. CHIU

Measuring the medial longitudinal arch: Building a classification system

Background: Historically, structural and functional characteristics of an individual's foot arch (FA) type have been classified together on a single, linear continuum ranging from flat to normal to high. Flat arches are typically considered flexible while high arches are considered rigid. This assumes these characteristics match, however, recent research suggests otherwise. A high structural arch may functionally be rigid or flexible, depending on how the LA deforms with applied force. A classification scheme that independently evaluates: 1) structural and 2) functional FA characteristics is required.

The primary purpose of this research is to develop an objective metric to measure: 1) structural and 2) functional FA types. A secondary objective of this study is to examine structural and functional FA types in a large sample of healthy adults. This research will aid future studies examining how structural and functional FA types influence lower extremity bone and soft tissue loading, and associations between injury patterns and specific FA types.

Hypothesis: It is hypothesized that measuring arch footprints under different loading conditions will provide information on structural and functional characteristics of a person's foot. Specifically, non-weight bearing footprints will indicate structural arch type. Weight bearing may cause LA deformation, therefore, change in arch footprint from non-weight bearing to weight bearing will indicate functional arch type.

Experimental Design: Participants (n=192) will be recruited from the university population. Reflected images of the bottom of participant's feet will be collected using a mirror box unit while the participant is sitting (unweighted), standing (fully-weighted), and in a partial squat (partially-weighted), to progressively evoke calcaneal rotation, which contributes to LA flattening. The contact area of the foot for static, structural FA images will then be digitally analyzed and the weighted conditions will be compared to the unweighted values to provide a measure of functional FA type.

Presenter

Ran Zheng

Authors

RAN ZHENG
BRIAN MARAJ

Perceptual motor integration in a prediction motion task

Many activities in our daily life require us to interact with moving objects which may become occluded during movements forcing us to make spatial and temporal estimations. Such estimations are components of Prediction Motion Tasks (PMT). Previously (Marchak, et al 2013), using a custom designed ball movement and occlusion setup on a computer screen; we demonstrated differences in mouse click versus mouse move conditions. In the present study, we further examined performance in PMTs collecting data for eye and hand movements. Five participants ($M=26$ yrs, $SD=5.6$) predicted the arrival of a ball to a target on a computer touchscreen by either clicking the mouse (mouse click) or by using their index finger to track the ball from a start position to the target and touching the screen upon estimated arrival (hand tracking) following occlusion. The targets moved at 3 speeds creating three different viewing and occluded periods (0.5, 0.75 and 1 seconds). Hand movements were recorded by a 3D motion analysis system (Optotrak 3020) at 240Hz and eye movements were monitored by eye tracker (ASL 6000) at 240Hz. Reaction time, movement time and spatial error data were analyzed using a 2 (movement condition) by 3 (ball speed) repeated measures ANOVA. Results revealed that participants were more accurate when the ball speed was slower. In the hand tracking condition, reaction time for the eyes was faster than the hands and resulted in faster movement times. Results will be discussed as they relate to cognitive and clocking strategies in prediction motion task performance.

Abstracts

Oral Presentations

Presenter

Aïda Valevicius

Authors

AÏDA VALEVICIUS

QUINN BOSER

EWEN LAVOIE

OGNJEN KOVIC

BRODY KALWAJTYS

ALBERT VETTE

CRAIG CHAPMAN

PATRICK PILARSKI

JACQUELINE HEBERT

Comparative Upper Body Kinematics of Prosthetic Users During Two Functional Tasks

Performance of clinical functional tasks is often quantified via time to completion of the task. While this outcome metric provides a useful measure for efficiency, it is not sensitive to compensatory joint patterns often employed by individuals with upper limb amputations. Such compensatory movements are essential to detect as they may increase the risk of joint injuries. Through the addition of a multi-body kinematic assessment, clinical functional tasks may be altered to provide a new breadth of outcome metrics to assess prosthetic users. With this goal in mind, the objective of this study was to: 1) create a comprehensive set of normative upper body kinematics for two functional tasks that can be used as a benchmark for clinical assessments; and 2) provide preliminary findings on how prosthetic users perform these tasks and evaluate their compensatory mechanisms.

Data was collected from 20 able-bodied participants and 3 prosthetic users. Prosthetic users had transradial and/or transhumeral amputations. Participants performed two functional upper limb tasks, a pasta box task and cup transfer task. Data was collected using a 12-camera VICON motion capture system. Participants had rigid plate, retro-reflective markers affixed to their upper body and pelvis and performed 20 or 10 trials per task, for able-bodied and prosthetic users, respectively.

The following joints were included in the analysis: shoulder, elbow, wrist, and trunk motion. Task duration and various end-effector metrics have also been calculated: hand trajectory and velocity, grip aperture, and number of movement patterns during the tasks. Our results indicate that shoulder and trunk joint motions are the primary joints involved in completing the tasks effectively for prosthetic users and these joints showed an increase in range of motion compared to able-bodied. This type of assessment of compensatory mechanisms in prosthetic users using quantitative methods will allow for refinement of advanced assistive technologies.

Presenter

Emily Ainsley

Authors

AINSLEY, E.N.
HARING, S.K.
MILLER, D.J.
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BERGQUIST, A.J.
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Contraction fatigue associated with three types of neuromuscular electrical stimulation delivered to produce a range of contraction amplitudes

Neuromuscular electrical stimulation (NMES) can be applied over a muscle belly (mNMES) or nerve trunk (nNMES) to produce contractions for rehabilitation. However, rapid contraction fatigue, which manifests as a decline in torque over time, often limits its effectiveness. To minimize fatigue, we developed interleaved NMES (iNMES), which involves alternating stimulating pulses between the mNMES and nNMES sites, thereby reducing motor unit discharge rates. The purpose of the present experiment was to compare fatigue associated with nNMES, mNMES and iNMES of the tibialis anterior (TA) muscle at various torque amplitudes. This experiment is ongoing, with iNMES data being currently collected. Nine healthy subjects participated in 12 sessions on different days. Participants performed 2 maximum isometric voluntary contractions (MVC) of ankle dorsiflexion. Trains of stimulation (duration = 0.3s; pulse width = 500s; frequency = 40 Hz) were delivered and stimulation amplitude was adjusted to generate 5%, 15% or 25% of a MVC or the maximal tolerated stimulation amplitude (Max). A fatigue protocol consisting of 170 trains (0.3s; 500s; 40 Hz; 0.7s rest) for one of the 4 contraction amplitudes was then conducted. Contraction fatigue was quantified by the fatigue index (FI), calculated as the average torque of the last 10 trains of the fatigue protocol divided by that during the first 10 trains. The FI's for mNMES at 5%, 15%, 25% and Max were $0.85 \pm 0.26\%$, $0.77 \pm 0.14\%$, $0.69 \pm 0.11\%$ and $0.65 \pm 0.11\%$, respectively. The FI's for nNMES at 5%, 15%, 25% and Max were $1.07 \pm 0.48\%$, $0.82 \pm 0.13\%$, $0.78 \pm 0.22\%$ and $0.61 \pm 0.17\%$, respectively. Qualitatively, larger contractions resulted in greater fatigue. We anticipate that iNMES will generate less fatigue than mNMES and nNMES during low contraction amplitudes and will have similar fatigue in comparison to mNMES and nNMES during larger contraction amplitudes. The results of this study have important implications for in reducing fatigue during NMES for rehabilitation.

Presenter

Ewen Lavoie

Authors

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ELIZABETH A CROCKETT
OGNJEN KOVIC
AIDA M VALEVICIUS
QUINN A BOSER
PATRICK M PILARSKI
ALBERT H VETTE
JACQUELINE S HEBERT
CRAIG S CHAPMAN

Establishing normative eye-movement patterns in functional tasks

Where a person is looking says much about what they are thinking. As a result, studying eye movements has become critical to studying human behaviour. Recent advances in eye-tracking have allowed researchers to move from testing stationary and seated individuals to testing mobile participants engaging with real objects. However, even with these advances, the majority of studies still use restrictive lab-based tasks that are not representative of the functional demands on the eye movement system in the real world. Thus, we studied eye movements in two tasks mimicking real-world demands, establishing a normative model for functional eye gaze.

As we predicted, there was little, if any, eye fixation on a participant's own hand when moving an object. Instead, we found that participants tend to look ahead to the next target of action. We believe that it is other sensory systems, predominantly proprioception, that allows for this behaviour. Thus, an important extension that is currently underway is to test individuals who have compromised proprioception – most notably, upper limb amputees. The strong prediction is that upper-limb prosthetic users will need to fixate on their moving limb as it interacts with objects as they do not have proprioception giving feedback from this movement. Thus, my project has made these comparisons possible by establishing a normative data set for eye movement patterns during functional tasks.

The normative data set that we have established has the potential to aid both clinicians and researchers: clinicians will be able to better assess a patient's level of impairment relative to a validated baseline and researchers will be able to use this normative eye-movement data to explore even more complex real-world tasks.

Presenter

Jodie Stearns

Authors

JODIE A. STEARNS
VALERIE CARSON
JOHN C. SPENCE
GUY FAULKNER
SCOTT LEATHERDALE

The role of negative peer experiences in the physical activity and screen time of youth: A cross-sectional study

Negative peer experiences may lead overweight and obese adolescents to be less active and more sedentary. Our study is among the first to empirically test these relationships and hypothesized that (1) negative peer experiences would mediate the negative relationship between body weight status and moderate-to-vigorous physical activity, and (2) negative peer experiences would mediate the positive relationship between body weight status and screen time. Participants were a part of the Year 1 data (2012-2013) from the COMPASS study, a prospective cohort study of high school students in Ontario and Alberta, Canada. Complete survey data were available from 18,018 students in grades 9 to 12 from 43 Ontario secondary schools. The independent variable was weight status (non-overweight vs. overweight/obese), the mediators were peer victimization and bully-perpetration, and the dependent variables were screen time and moderate-to-vigorous physical activity. Multilevel path analysis was conducted, controlling for clustering within schools and covariates. Weight status was significantly related to screen time, with overweight/obese adolescents participating in 0.327 more hours/day (± 0.037 ; or 20 minutes/day) of screen time than non-overweight adolescents ($p < .001$). This pathway remained significant after adjusting for mediators. The specific indirect effect through peer victimization was significant ($p < .05$). Specifically, 0.019 hours/day (± 0.008 , or 1 minute/day) of screen time in the overweight/obese participants compared to non-overweight participants could be attributed to increased peer victimization experienced by the overweight/obese participants ($p < .05$). Weight status was not significantly related to moderate-to-vigorous physical activity ($p = .053$). Further, the proposed mediators did not mediate this relationship in the hypothesized direction. We found that greater peer victimization partially explained why overweight and obese adolescents engaged in more screen related activities than non-overweight adolescents. However, the effects were small and may be of limited practical significance.

Presenter

Liane Jean

Authors

LIANE M.Y. JEAN

LOREN Z.F. CHIU

Progression for squat exercise

INTRODUCTION The squat is an exercise that targets the quadriceps and hip extensors. The quadriceps are important muscles contributing to activities of daily living, sport performance and injury prevention. For example, increasing quadriceps strength is imperative for individuals returning to activity after lower extremity injury such as ACL reconstruction. Moreover, squat exercise provides health benefits such as increasing bone mineral density. The effectiveness of squat exercise is dependent on technique; many adults do not have the knowledge and general physical fitness to perform the squat properly. Therefore, the purpose of this presentation is to describe methods for teaching the squat to healthy, athletic and injured populations.

TEACHING PROGRESSIONS A teaching progression, starting with the plate squat allows flexibility and strength limitations to be observed and addressed. The plate squat is used to teach a full squat, defined as the thigh contacting the calf muscles; this squat depth is required to improve quadriceps strength. Achieving a full depth depends on torso strength, limitations addressed in the teaching progression, after which, it is appropriate to progress to barbell squats. Injured populations may require additional progressions. For example, ACL injured persons shift mechanical effort from the quadriceps to the hip extensors during multi-joint tasks [4]. This reduces the effectiveness of performing squats. Elevating the non-involved limb on a 5cm platform reduces or eliminates this compensatory strategy by increasing the knee extensor effort in the involved limb [5].

CONCLUSIONS Squatting to full depth, which requires flexibility and strength in the torso musculature, is necessary to increase strength of the quadriceps. Plate squats are an introductory exercise in a progression to teach squat exercise. Injured populations may require a modified squat to prevent use of compensatory strategies.

Presenter

Michael Dubnewick

Authors

MICHAEL J DUBNEWICK

TARA-LEIGH MCHUGH

Wandering in and Wondering alongside: Stories of relationship building with marginalized and inner city Indigenous peoples in community and garden places

Over the past several years I have been regularly involved in several food based recreation programs facilitated for marginalized and Indigenous peoples in Edmonton's inner city. It was during these regular visits to the inner city that I began to feel tensions to who I was becoming as a researcher-practitioner working with Indigenous peoples. I began to wonder what stories I was stepping into as a white, affluent, male researcher-practitioner and what stories I told/knew of the community and people I was only beginning to know. These formative wonders guide my doctoral work that narratively inquires (Clandinin & Connelly, 2000) into the experiences of recreation practitioners as they facilitate food-based programs for inner city and Indigenous peoples.

For this presentation I will share my own experiences of how my stories to live by guided me and shifted as I engaged with the community. Specifically, I will recall past experiences that situated my understanding of working with people who are labelled as "in need" to show how the personal-practical knowledge of recreation practitioners should be seen as a key source of knowledge in developing ethical and relational recreation programs with Indigenous peoples. I will also share forward-looking stories to show I imagine my research relationships going forward. With growing calls by numerous groups within Canada and elsewhere to reflect upon what reconciliation means and looks like, this research is an important step to show how reconciliations is experienced, lived out and re-imagined in recreation and community places by recreation practitioners and researchers. In sharing my experiences, I hope this presentation supports your continued journeys as you live, tell, re-tell, and re-live your own stories of relation with non-Indigenous and Indigenous peoples.

Presenter

Mohadeseh Mahmoudi

Authors

MOHADESEH MAHMOUDI

Place Attachment, Urban Open Spaces, and Leisure Behaviour: A Review

In cities, urban spaces serve as venues for social interaction, sociability, conviviality, and the enactment of community. Urban open spaces such as plazas, squares and parks are the spaces where people can develop relationships and engage with each other. To understand leisure in the context of everyday life, researchers must consider the spatial perspective in which leisure activities are pursued. A leisure setting is a context within which recreation takes place; this setting can facilitate or hinder not only the activities that occur but also the quality of the recreation experience (McCool, Stankey & Clark, 1985). Urban public spaces are settings that are integral to the examination of leisure behaviour (Johnson & Glover, 2013).

Using a place-based lens for examining the leisure behaviour, it is notable that a main factor affecting the recreation experience is emotional attachments to recreation places. For instance, Williams, Patterson, Roggenbucka and Watson (1992) discovered wilderness users have emotional and symbolic ties to the natural landscape that are manifested as attachment to the site or “place attachment”. Place attachment is expressed through actions such as maintaining closeness to a specific place, or engagement in the development and reconstruction of the place. This attachment to outdoor recreation places affects recreationists’ experience and behaviour in many ways.

A review of research relating to attachment, urban open spaces and leisure reveals that the place-based psychological ties to the open spaces can make a critical contribution to issues such as natural resource management and conservation (Stewart, Williams & Kruger, 2013), fostering pro-park behaviours (Halpenny, 2010), park management (Inglis, Deery & Whitelaw, 2008), creating community attachment and social capital among neighborhood residents (Manzo & Perkins, 2006; Mihaylov & Perkins, 2014).

Presenter

Nathan Wispinski

Authors

NATHAN J WISPINSKI
JENNIFER K BERTRAND
ANTHONY SINGHAL
CRAIG S CHAPMAN

How choices evolve: Evidence from the brain and the hand

Do you prefer chips or a chocolate bar? Are you going to move right or left next? Even the most trivial choices, like deciding on a snack food or future movement plan, take time. But what is the brain doing during this time? Theories of decision making state that during the time before a decision, evidence for and against choosing available options is accumulated in the brain. When evidence for one option reaches some threshold, a decision is made.

Remarkably, neural signals reflecting these proposed evidence accumulation dynamics have been found in cellular recordings in non-human primates, and more recently, in humans by recording brain activity from the scalp. These findings reveal a tremendous amount about why we take as long as we do to make decisions, and exactly what computations the brain is implementing to come to a consensus. However, most of these studies ask participants to make detection decisions (e.g., “Did you see it?”) by making short responses (e.g., Pressing a key on a keyboard). These kinds of decisions are far removed from decisions we have evolved to make, and make every day – discrimination decisions (e.g., “Which fruit do I like better?”) with longer responses (e.g., Moving to grab a piece of food).

Here, we ask participants to discriminate between potential options (“Which circle is brighter?”), and move to make their choice, while recording brain activity (electroencephalography). Using these combined techniques we can potentially answer deep theoretical questions about the algorithm the brain implements to make decisions. Preliminary results show that although they have several differences, discrimination decisions implement similar neural processes as detection decisions. Future findings will further illuminate how decisions evolve, how we might be able to better our own choices, and potentially prevent disorders like problem gambling associated with maladaptive decision making.

Presenter

**Rebecca Marsh
& Amanda Ebert**

Authors

REBECCA MARSH
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The Hidden Labour of Pursuing Physical Activity for Youth Experiencing Disability and Their Parents

The labour required of people experiencing disability to pursue community sport and recreation activities is often hidden from those who don't experience disability. Participation is not always easy for youth, as they sometimes experience exclusion through social isolation, inaccessible equipment, and barriers in professional practice. Parents of youth must negotiate barriers in an effort to secure a meaningful activity for their child. Barriers such as exclusive policies, complex relationships with service providers, and stigmatizing social attitudes exist within many facets of recreation. The Pat Austin Adapted Physical Activity Lab has completed two studies in an attempts to uncover the hidden labour phenomenon. Study one unpacks the hidden labour of 10 parents of youth living with impairment. Study two explores the experiences of youth themselves. Common themes from both perspectives emerged. These include (a) Finding a fit – pushing through social vulnerabilities to locate and connect with enriching PA communities, (b) working to shed stigma around impairment, (c) education and problem solving to establish autonomy and sustain participation and, (d) having to stay home – unsuccessful involvement. Cohesion and diversion between the experiences of youth and their parents will be presented, using quotations for illustration, in order to display a larger picture of how hidden labour exists, and may be alleviated within inclusive recreation community programs.

Presenter

Torstein Eriksen Dæhlin

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TORSTEIN E DÆHLIN

TRON KROSSHAUG

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**Two-dimensional video analyses for coaches:
Examples from weightlifting**

The proliferation of consumer devices that can record, as well as open source software programs used to analyse digital video, has made such analyses a low cost and widely available assessment tool for both researchers and coaches. Utilizing video analyses, researchers and coaches can classify different techniques or evaluate movement quality. However, despite the wide availability and the importance of objective rather than subjective movement evaluation, such analyses are rarely utilized in practice. One potential reason is the time required to process video data. The purpose of this study was to evaluate the use of an LED-based marker, digital video, and open source software to automatically track a point of interest, in an attempt to reduce data processing time. One of the investigators was recorded using digital video while performing multiple sets of the snatch, clean & jerk, and back squat. An LED-based marker was placed on the right end of the bar. This marker was automatically tracked using two different open source software programs to obtain vertical and horizontal position coordinates. The LED-based marker was successfully auto-tracked for all videos over a variety of camera settings, and processing time was approximately 2 minutes per recording. Moreover, the vertical and horizontal bar displacements and vertical bar velocity were consistent between the two software programs, different filtering and smoothing techniques, and across repeated digitizations. The present study demonstrates that an LED-based marker can be automatically tracked using open source software, providing an accessible, low cost method to objectively evaluate movement. This method is not specific to weightlifting and may also be applied to other movements such as running and jumping.

Presenter

Vincent Tedjasaputra

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VINCENT TEDJASAPUTRA
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TRACEY L BRYAN
SEAN VAN DIEPEN
MELISSA M BOUWSEMA
MICHAEL K STICKLAND**Intrapulmonary arteriovenous anastomoses are detected following full recruitment of pulmonary capillaries during exercise**

Exercise results in the recruitment of anatomical intrapulmonary arteriovenous anastomoses (IPAVA). There is speculation that IPAVA recruitment may act as a 'pop-off' valve once pulmonary capillaries are fully recruited during exercise to protect the lung from large increases in pulmonary arterial pressure. Recognizing that the pulmonary capillaries are fully recruited in the supine position, we hypothesized that IPAVA recruitment during incremental exercise would initially occur at a pulmonary capillary blood volume (V_c) that approximated the value observed in the supine position. Twenty healthy subjects (9 males, 11 females, mean \pm SD, age: 27 \pm 7 yrs, VO_{2max} : 49.9 \pm 10.5 mL \cdot kg $^{-1}\cdot$ min $^{-1}$) performed cycling exercise at 30, 50, 70 and 90% of VO_{2max} . Capillary blood volume (V_c) was determined using the multiple FIO₂-DLCO breath-hold method in the supine and upright positions at rest, as well as during upright exercise. IPAVA recruitment was evaluated by agitated saline contrast echocardiography. Mean V_c was 80.2 \pm 17.2 mL in the resting upright position, which increased to 94.6 \pm 24.6 mL when supine ($p=0.043$). During incremental upright exercise, V_c increased up to 132.9 \pm 26.3 mL at peak exercise ($p<0.01$). IPAVA recruitment was detected in all subjects during exercise, and first occurred at a mean V_c of 93.8 \pm 16.0 mL, which is significantly greater than resting upright V_c ($p<0.05$), but similar to resting supine V_c ($p=0.97$). Results were similar in men compared to women, and results were consistent when adjusting for alveolar volume. IPAVA recruitment was observed at a capillary blood volume similar to the value observed in the supine position. As the supine position is widely believed to result in the perfusion of all pulmonary capillaries, these data support the hypothesis that recruitment of IPAVAs follows full recruitment of the pulmonary capillaries.

Presenter

Cameron Michael Ehnes

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Effects of Wildland Firefighter Clothing Ensemble on Pack Test Performance

The pack test (hiking 4.83 km, carrying a 20.5 kg backpack, in 45 min or less) is widely used to evaluate readiness for work in wildland firefighters. Despite the popularity of this test, there appears to be no standardized clothing prescription and it is unclear how this might influence test performance. To investigate the effects of work clothing on physiological responses and test performance, 18 male and 12 female participants (age: 27 ± 7 y, height: 176.1 ± 8.8 cm, mass: 76.7 ± 14.3 kg) practiced and then completed, on separate days, randomly-ordered pack tests in two conditions: exercise clothing (EX); and, wildland firefighter work clothing (W). For EX, participants wore shorts, t-shirt and running shoes, and added, for W, coveralls and work boots. For both tests, subjects carried a correctly sized and fitted 20.5 kg backpack. Tests were completed, as fast as possible without running, on a 200 m indoor track. Heart rate and perceived exertion data were collected each lap. On a separate day, subjects completed a modified Balke treadmill test to measure peak oxygen uptake ($\dot{V}O_{2peak}$) dressed in the EX ensemble. Average heart rate (164 ± 3 vs 156 ± 3 beats.min⁻¹), perceived exertion (5.4 ± 0.3 vs 4.9 ± 0.3 Borg units) and breathing stress (4.6 ± 0.3 vs 3.9 ± 0.3 Borg units) were higher, but pack test time (42.17 ± 0.82 vs 40.65 ± 0.61 min) was slower in W compared to EX (all $p < 0.05$). There were modest correlations between $\dot{V}O_{2peak}$ and pack test time (W: $r = 0.67$, EX: $r = 0.63$, both $p < 0.01$). Linear regression revealed that pack test time of 45 min predicted a $\dot{V}O_{2peak}$ of 40.7 and 42.9 mL.kg⁻¹.min⁻¹, in EX and W conditions, respectively. These predictions are somewhat different than reported previously. The work clothing ensemble increased physiological strain and decreased pack test performance. The results of this study underscore the importance of wearing a correct work clothing ensemble during evaluation of readiness for work.

Presenter

Jane Hurly

Authors

JANE HURLY

"When you see nature, nature give you something": The role of nature-based leisure in refugee integration in Canada

This study investigated the impacts of nature-based leisure on the integration of refugees in Canada. I used semi-structured interviews and photovoice to explore four refugees' experiences of a two-day winter camping experience in northern Alberta, and how it might foster integration. Participants from three African countries, and Iran, appreciated the experience as an opportunity to be away, to connect with others, to learn new activities, involve their families, and as a distraction from their daily lives. Refugees acknowledged the welcoming efforts of the social services and parks agencies, which further bolstered refugees' confidence and efforts to integrate. Their experiences underscored both the importance of access to nature-based leisure in mitigating acculturative stress, and host societies' attitudes toward newcomers in fostering integration. These findings suggest that developing nature-based leisure opportunities for refugees may further encourage their integration into the larger society.

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