



International Paralympic Committee

**VISTA 2017**

**Scientific Conference Booklet**

Chelsea Hotel, Toronto  
20-23 September 2017



## Contents

|   |    |
|---|----|
| Forwards .....                              | 2  |
| VISTA 2017 Local Organizing Committee ..... | 9  |
| VISTA 2017 Scientific Committee .....       | 9  |
| Scientific Programme Information.....       | 10 |
| Paralympic Scientific Award Winner .....    | 12 |
| General Information .....                   | 13 |
| About Toronto, Ontario, Canada.....         | 20 |
| Toward an Accessible Ontario .....          | 21 |
| Venues .....                                | 22 |
| Programme at a Glance .....                 | 25 |
| Detailed Programme.....                     | 29 |
| Keynote Speakers .....                      | 45 |
| Invited Symposia Abstracts .....            | 48 |
| Workshops .....                             | 52 |



Dear Participants,

Welcome to Toronto, Canada, for the eighth edition of the International Paralympic Committee's VISTA Conference.

This year marks something of a homecoming for this event; Jasper, Canada, staged the first ever VISTA back in 1993 and it is wonderful to be back in Toronto so soon after the conclusion of the Toronto 2015 Parapan American Games.

Over the coming days we are expecting around 300 sport scientists and Para sport experts to attend this event which this year follows the theme "Opportunities and challenges in Paralympic sport science and medicine support."



The topic will be debated by a number of keynote speakers, symposia, oral presentations and poster sessions featuring a number of world class speakers and Paralympians who have been brought together by the Scientific Committee.

Amongst the keynote speakers will be Vicky Goosey-Tolfrey who I am delighted to say will be presented with the biennial Paralympic Scientific Award during Wednesday's Opening Ceremony.

Vickey, who will deliver her keynote during the Opening Ceremony on 20 September, will receive the highly prestigious award in recognition of her academic work to optimize athletic performances in Para athletes.

Finally, this year's event is organised through a partnership between the IPC, the Canadian Paralympic Committee and the Canadian Sport Institute Ontario (CSIO). I would like to thank all delivery partners for their dedication in staging this event which I am confident will help build on successful previous editions of this biennial conference.

Enjoy VISTA and your time in the wonderful city of Toronto.

Xavier Gonzalez

Chief Executive Officer

International Paralympic Committee



Welcome to Toronto, welcome to VISTA 2017.

As the IPC Sport Science Committee chair, it is an honour and pleasure to welcome you to the eighth VISTA conference in Toronto.

After a European journey of more than 20 years, VISTA is returning to Canada, the country where it all began, in 1993, in Jasper, Alberta. The proceedings of that first VISTA conference is testimony of the phenomenal work done in those pioneering years of the International Paralympic Committee, and the immense growth the Movement experienced since then.



VISTA 2017 is ready to add another impulse to the development of the research lines addressing the questions that are at the heart of the Paralympic Movement. It is evident that in a multi-cultural, multi-impairment, and multi-sport organisation, these research questions are multi-disciplinary.

The Scientific Committee of VISTA 2017 has tried to safeguard the disciplinary balance in the scientific programme through well selected Keynotes and Invited Symposia. Together with 132 oral and poster presentations and 10 interactive workshops, - an initiative of the Toronto Organising Committee -, the programme will be diverse, innovative, and of excellent scientific quality.

Thank you for attending, thank you for being part of the Paralympic Movement.

Yves Vanlandewijck

Chairperson of the Scientific Committee

Chairperson of the IPC Sports Science Committee



## Welcome to VISTA 2017!



On behalf of the host organizing committee, it is my honour and pleasure to welcome you to Toronto for VISTA 2017, the world's leading sport science conference focusing on Para sport.

This is the eighth edition of the conference and the first time it has returned to Canada since the original edition of VISTA which took place in 1993 in the beautiful Rocky Mountains of Jasper, Alberta, in western Canada.

As the Founding President of the International Paralympic Committee, I was the creator of the inaugural conference; and today, as the honorary chair of VISTA 2017, I am delighted to see the conference return to its Canadian roots in support of the international community. It is truly encouraging to reflect on the immense progress the international Paralympic movement has made since that time – as well as the exciting opportunities and potential that still await us.

VISTA aims to provide a forum for exchange on current information, research and expertise related to Paralympic Sport and the Paralympic Movement. On behalf of the organizing committee and all Canadians, I would like to extend a warm welcome to the hundreds of delegates and many volunteers who will bring this conference to fruition.

I invite you all to make the most of your time here together in Toronto; to advance your understanding of topical issues; to expand your community of collaborators and experts; so that together we can continue to build on our dynamic and powerful global Paralympic movement.

Yours in sport,

Dr. Robert D. Steadward, OC, AOE, PhD, LLD  
Honorary Chair, VISTA 2017  
Founding President, International Paralympic Committee



Dear VISTA 2017 delegates,

The Canadian Paralympic Committee and Canadian Sport Institute Ontario are pleased to be your hosts for the International Paralympic Committee's bi-annual sport science and sport medicine conference, VISTA 2017, presented by Pfizer Canada Inc.

The VISTA Conference sees over 300 international delegates come together to share and exchange current information, research, innovative ideas and expertise related to Paralympic sport and the Paralympic Movement.

VISTA 2017 coincides with Canada's 150<sup>th</sup> birthday year and celebrations highlighting achievements that have made Canada the strong, proud and free country it is today. Events are taking place across the country all year as Canada marks the sesquicentennial anniversary of Canadian Confederation.

Many activities for the 2017 edition of VISTA will take place at the Toronto Pan Am Sports Centre (TPASC), a spectacular multi-sport legacy venue from the Toronto 2015 Parapan American Games. We hope you will enjoy your stay in Toronto and enjoy all the city has to offer, along with the camaraderie of your professional colleagues in the global Paralympic movement.

VISTA 2017 would not be possible without the investment of our sponsors and funding partners: Pfizer Canada Inc., the Government of Canada and the Government of Ontario. We thank them for their generous support. We thank you also, for your participation and contributions to what we anticipate will be an outstanding several days together in advancement of international Para sport.

Sincerely,

Debbie Low  
CEO, Canadian Sport Institute Ontario

Karen O'Neill  
CEO, Canadian Paralympic Committee



SEPTEMBER 20-23, 2017

*Greetings from the Honourable Eleanor McMahon  
Minister of Tourism, Culture and Sport*

On behalf of the Government of Ontario, I offer my warmest greetings to everyone attending the 2017 VISTA Scientific Conference.

Welcoming 300 delegates from all five continents, this conference provides an important occasion to share expertise and ideas on Paralympic sport science and sport medicine. I'm thrilled that Ontario has the privilege of hosting this year's event, and I am pleased to showcase our province's amateur sport development sector to industry professionals gathered here from around the world.

I want to thank everyone involved in organizing the conference, including the Canadian Paralympic Committee and the Canadian Sport Institute Ontario, as well as the event's partners and volunteers. Your efforts are helping to advance support for current and future generations of Paralympic athletes.

I wish you a productive and enjoyable conference.

All my best,

Eleanor McMahon  
Minister





### Message from the Mayor

It is my pleasure to extend greetings and a warm welcome to everyone participating in VISTA 2017, the International Paralympic Committee's biennial sport science and sport medicine conference being co-hosted by the Canadian Paralympic Committee and Canadian Sport Institute Ontario this September.

The VISTA Conference sees over 300 international delegates come together to share and exchange current information, research and expertise related to Paralympic Sport and the Paralympic Movement.

The City of Toronto is fortunate to have individuals and organizations that commit a significant amount of time to the overall well-being of our communities. I thank all those individuals who, through their commitment, help make a difference.

On behalf of Toronto City Council, please accept my best wishes for a memorable event and continued success.

Yours truly,

Mayor John Tory  
City of Toronto





### VISTA 2017 Local Organizing Committee

|                            |  |
|----------------------------|--|
| Bob Steadward              | Honorary Chair, VISTA 2017 Local Organizing Committee    |
| Debbie Low                 | Co-Chair & CEO of Canadian Sport Institute Ontario       |
| Karen O'Neill              | Co-Chair & CEO of Canadian Paralympic Committee          |
| Laura Albright             | Co-Chair Marketing & Communications Team; Logistics Team |
| Tina Doyle                 | Accessibility Advisor; Volunteer Team                    |
| Catherine Gosselin-Després | LOC Scientific Committee Advisor                         |
| John Grootveld             | Co-Chair Sponsorship Team                                |
| Cheryl Heyd                | Chair Logistics Team                                     |
| Alison Korn                | Marketing & Communications Team                          |
| Dr. Heather Logan-Sprenger | Chair LOC Scientific Committee                           |
| Scott McRoberts            | Chair Volunteer Team                                     |
| Tristian Reid              | Volunteer Team   |
| Martin Richard             | Co-Chair Marketing & Communications Team                 |
| Francois Robert            | Co-Chair Sponsorship Team                                |

### VISTA 2017 Scientific Committee

|                                     |   |
|-------------------------------------|---|
| Prof. Yves Vanlandewijck (BEL)      | Chair, Chairperson IPC Sports Science Committee               |
| Dr. Heather Logan-Sprenger (CAN)    | Co-Chair  |
| Dr. Kelly Arbour-Nicitopoulos (CAN) | Member  |
| Dr. Steven Dilkas (CAN)             | Member  |
| Dr. Osnat Fliess-Douer (ISR)        | Member, IPC Sports Science Committee                          |
| Dr. Jon Kolb (CAN)                  | Member  |
| Dr. David Legg (CAN)                | Member, IPC Sports Science Committee                          |
| Ms. Daniela Luchina (ARG)           | Member, IPC Sports Science Committee – Athlete Representative |
| Dr. Raymond So (HKG)                | Member, IPC Sports Science Committee                          |
| Dr. Walter Thompson (USA)           | Member, IPC Sports Science Committee                          |
| Dr. Peter Van de Vliet (GER)        | IPC Medical & Scientific Director                             |



## Scientific Programme Information

### Proceedings

There will be no formal proceedings published for this Conference.

Abstracts of papers presented at this VISTA2017 Conference are published in this booklet.

Presentations will be uploaded to the IPC website after the Conference, subject to authorization obtained from the speakers.

### Presentation Information

#### Free Communications

Presentations will run for a maximum of 12 minutes, followed with a 3-minute time frame for questions and answers. Session chairpersons will remind the speakers of the remaining timeframes.

Speakers will not be allowed to present from their own laptops. All presentations must therefore be uploaded in the Speaker Ready Room no later than:

- the evening before for presentations in morning sessions
- lunch time for presentations in afternoon sessions

There is NO upload opportunity in the meeting rooms at the start of the sessions.

The computer that presentations will be uploaded on is a PC running Windows 7 and Microsoft 2013, so please ensure presentations are compatible.

The transfer of files must be done by means of USB storage devices. Files should not exceed 1.5 GB.

The Speaker Ready Room is located Newton Room, located on the 3<sup>rd</sup> floor of the Chelsea Hotel.

All presentations will be in English. There will be no translation services.

#### Poster Sessions

Posters must be set up in the VISTA Poster Area located in Mountbatten Lane no later than 30 minutes before the start of the session. Posters must remain displayed throughout the duration of the session.

Presenters must be available for a poster discussion as identified in this booklet.

Posters must be removed no later than 1 hour after the close of the session. The LOC remains the right to destroy posters that are not removed in time.



### Poster Award

All posters are part of a poster award contest. A jury will consider all submissions on the basis of both the poster abstract as well as the poster display and any discussion with the presenters during the poster sessions.

Award winners will be announced at the Gala Ceremony on Friday evening (22 September).

### **Certificate of Attendance**

Electronic certificates will be sent to each delegate via email.



## Paralympic Scientific Award Winner

### Victoria Goosey-Tolfrey Named VISTA 2017 Scientific Award Winner

For nearly two decades, Loughborough University professor Victoria (Vicky) Goosey-Tolfrey has sought ways to apply sports science to Para athletes who have been training for the international stage. For example, back for the Beijing 2008 Paralympic Games, Goosey-Tolfrey led a team of sports scientists and healthcare experts, the Beijing Acclimatisation Group, to ensure athletes were prepared.



The academic record of Professor Goosey-Tolfrey covers a wide range of disciplines that all contribute to optimising Para athlete performances, and her answers to very concrete demands of athletes in different sports are appreciated by the athletes and their support staff, and are widely recognised by the academic community.

Prof. Goosey-Tolfrey is the Director of the Peter Harrison Centre for Disability Sport. This Centre contributes significantly to research and practice, both in the areas of sport performance and health and wellbeing, to improve knowledge about Paralympic sport and to promote the substantial health and quality of life benefits that can be gained through participation in disability sport and physical activity. The centre is heavily involved in research, in addition to providing sport to a number of GB squads.

Goosey-Tolfrey was part of the IPC Medical & Scientific Committee from 2005-2010, and currently acts as a sport science consultant for the Great Britain Wheelchair Rugby Association and Para triathlon, overseeing the delivery of a programme of applied support that led to Rio 2016.

In her keynote speech, Goosey-Tolfrey will present on the topic "Pushing from Atlanta to Rio: Reflections of my Practitioner and Research Journey." She will reflect on her professional activities since attending Atlanta 1996, and will highlight how key individuals have supported the development of her research portfolio since then.

#### Previous Paralympic Scientific Award Recipients

|      |                           |
|------|---------------------------|
| 2015 | Jennifer Mactavish (CAN)  |
| 2013 | Rory Cooper (USA)         |
| 2011 | Lucas van der Woude (NED) |
| 2009 | Gudrun Doll-Tepper (GER)  |
| 2007 | Garry Wheeler (CAN)       |
| 2005 | Colin Higgs (CAN)         |



## General Information

### Admission

Participant name badges will be provided at the registration desk at the Chelsea Hotel, Toronto. All participants are requested to wear their badge throughout the Conference.

### Registration Desk

The registration desk, located on Level 2 of the Chelsea Hotel, Toronto will open on the following days and times:

**Tuesday 19 September:** 12:00 – 19:00 h

**Wednesday 20 September:** 9:00 – 20:00 h

**Thursday 21 September:** 7:00 – 19:00 h

**Friday 22 September:** 7:00 – 22:00 h

### Tourism Toronto Hours

A representative from Tourism Toronto will be on site at the registration desk on 19- 21 September to assist with recommendations and reservation bookings.

**Tuesday 19 September:** 10:00 – 20:00 h

**Wednesday 20 September:** 10:00 – 20:00 h

**Thursday 21 September:** 12:30 – 18:30 h

### Language

The official language of the Conference is in English; however, Canada has two official languages – English and French. As such, select conference materials and signage will be available in French language as well. Translation services will not be provided.



## Food and Beverages

### Breakfasts

#### Pre- and Post-Conference

If you have booked your room at the Chelsea hotel as part of VISTA special hotel package and if you are arriving prior to Wednesday 20 September (Day 1 of VISTA) you will be provided with breakfast vouchers for the Market Garden Restaurant at the Chelsea Hotel.

You will also be provided with breakfast vouchers for the restaurant for Sunday 24 September and any day following until your departure.

Breakfast vouchers will be provided to VISTA attendees upon check-in to the Chelsea Hotel.

**Vouchers will not be distributed for Thursday, Friday, or Saturday since breakfasts are served in banquet rooms as part of the conference.**

#### Thursday 21 September and Friday 22 September

Breakfast will be served in the Monarch and BB33 banquet rooms located on the lobby level. Only delegates staying at the Chelsea Hotel with the knife and fork icon on their badges will receive breakfast at the hotel. If you have arranged your own accommodation outside of the Chelsea Hotel, please check directly with the lodging booked for breakfast options.

#### Saturday 23 September

There will be a boxed breakfast and a coffee/tea station available in the lobby of the Chelsea Hotel, for participants staying at the Chelsea Hotel with the knife and fork icon on their badges, to enjoy on the bus ride to the Canadian Sport Institute Ontario at Toronto Pan Am Sports Centre. If you have arranged your own accommodation, please check directly with the lodging booked for breakfast options.

### Lunches and Coffee Breaks

Lunch and coffee breaks are included in your registration fee for the duration of the Conference.

#### Thursday 21 September and Friday 22 September

Lunch will be served in Monarch and BB 33 Banquet Rooms on the Lobby Level of the hotel. Coffee breaks will be served in the Churchill Foyer on Level 2 of the Chelsea Hotel, Toronto.



### Saturday 23 September

The morning coffee break will take place in the Fieldhouse at the Toronto Pan Am Sports Centre. Lunch and the afternoon coffee break will be served in the Atrium overlooking the pools on the Main Level (CSIO Level 2) of the facility at the Toronto Pan Am Sports Centre.

## **Evening Receptions**

### Wednesday 20 September

There will be a welcome reception on at the Chelsea Hotel immediately following the Opening Ceremony at the Churchill Foyer.

### Thursday 21 September

There will be a reception hosted by The Ontario Provincial Government offsite at MaRS Centre. You will have walking escorts to the venue. A walking map is also provided in the VISTA 2017 Conference App. Limited hard copy maps are available upon request at the Registration Desk.

### Friday 22 September

There will be a brief reception at the Chelsea Hotel prior to dinner in the Churchill Foyer.

## **Dinner**

### Friday 22 September

The Gala Ceremony on 22 September is included in the VISTA 2017 registration fee. The dinner will take place at 19:00 to 22:00 h in the Churchill Ballroom of the Chelsea Hotel.

All other dinners are not included in the registration fee or the hotel room rate. There are many restaurant options within walking distance of the hotel. A representative from Tourism Toronto will be on site at the registration desk from 19- 21 September to assist with recommendations and reservation bookings.





## Events and Social Activities

### Opening Ceremony – 20 September

The Opening Ceremony of the VISTA2017 Conference will take place on Wednesday 20 September from 17:30 to 18:15 in the Churchill Ballroom at the Chelsea Hotel, Toronto, followed by an Opening Reception in the Churchill Foyer.

### MaRS Reception – 21 September

The Ontario Ministry of Research, Innovation and Science, in partnership with the Ministry of Economic Development and Growth and the Accessibility Directorate of Ontario, will host a reception for VISTA Conference attendees the evening of 21 September 2017 from 18:00 – 20:00 at the MaRS Discovery District.

In advance of the official opening of the 2017 Accessibility Innovation Showcase, this event offers an exclusive opportunity to meet senior-level Ontario government officials and network with executives from dozens of Ontario-based companies and organisations developing innovative accessibility-related technologies and devices. Find out what's next in accessibility tech at one of North America's largest urban innovation hubs.

### What is MaRS (Medical and Related Sciences)?

Located in the heart of Canada's largest and the world's most diverse city, MaRS is uniquely placed to lead change. We bring together educators, researchers, social scientists, entrepreneurs and business experts under one roof. Founded by civic leaders, we have a mission that is equal parts public and private — an entrepreneurial venture designed to bridge the gap between what people need and what governments can provide. MaRS works with an extensive network of partners to help entrepreneurs launch and grow the innovative companies that are building our future.

### Accessibility Innovation Showcase

Now in its third consecutive year, the Accessibility Innovation Showcase (AIS) is an initiative of the Ontario Ministry of Research, Innovation and Science in partnership with the Ministry of Economic Development and Growth and the Accessibility Directorate of Ontario. An official event of the Invictus Games Toronto 2017, the AIS will feature more than 40 interactive displays of innovative technologies and devices developed by Ontario-based companies and organisations to enhance the quality of life for people with an impairment. The event program also features a themed speaker series along with entertainers and performers. The AIS will take place from 25-26 September at the Sheraton Centre Toronto Hotel, 123 Queen St. W. and is open to the public free of charge.

#OntarioAIS



## Gala Ceremony – 22 September

A Gala Ceremony will take place on Friday 22 September from 19:00 to 22:00 in the Churchill Ballroom at the Chelsea Hotel. Entrance is free for all VISTA 2017 participants. The Ceremony will include a welcome address from Canadian dignitaries, the poster award winner ceremony and a presentation of the VISTA 2019 host.

## Ontario Day – 23 September

The Local Organizing Committee is excited to welcome the VISTA 2017 delegates to Ontario Day at Canadian Sport Institute Ontario. The day will feature applied workshops in the world-class sport institute facility, as well as learning more about Ontario's strides in making the province accessible and inclusive for all.

## Transportation/Shuttles

31 August 23:59 (Bonn time, (CET)) is the deadline to submit attendees' travel itinerary at the VISTA registration portal to benefit from organised airport transfers. Airport transfers will not be guaranteed should the flight details be submitted at a later date.

Transportation will be provided from the Chelsea Hotel to Canadian Sport Institute Ontario and back on 23 September.

Airport transfers will be provided for all participants during peak arrival and departure times to and from Pearson International Airport and the Chelsea Hotel, Toronto.

Transportation will be available from CSIO to the airport for those participants who require to leave straight after the conference and who have notified the registration desk by 21 September at the latest.

Shuttle schedule for arrivals will be communicated to participants prior to the conference. Shuttles will run on 19-20 September and 23-24 September between Pearson International Airport and the Chelsea Hotel, Toronto.

Shuttle schedule for departures will be available at the VISTA registration/information desk (Level 2, Chelsea Hotel). Please reconfirm your departure time with VISTA registration/information desk staff at least one day before your departure.

**Toronto Pearson International Airport Address:** 6301 Silver Dart Drive, Mississauga, ON L5P 1B2

**Chelsea Hotel Address:** 33 Gerrard St W, Toronto, ON M5G 1Z4

**Note:** VISTA 2017 participants not staying at The Chelsea Hotel are responsible for making their own arrangements to and from The Chelsea Hotel for the conference proceedings.

## Electricity

In Canada, the standard voltage is 120 V. The standard frequency is 60 Hz. The power sockets that are used are type A and B.



Type A



Type B



## Medical Services

Memorize the national emergency telephone number: 911. If you experience a medical or other type of emergency, do not hesitate to call for help.

### Nearest Hospital:

Toronto General Hospital  
200 Elizabeth St. Toronto, ON M5G 2C4  
Phone: +1 (416) 340-3111

## Insurance

Conference registration does not include insurance. Participants are advised to arrange their own insurance coverage prior to departure.

As event hosts the Local Organizing Committee has general insurance coverage from 20 -24 September.

## Website

<https://www.paralympic.org/vista-2017>



## Social Media

Join the VISTA 2017 Conversation - Use #VISTA2017

Share your photos, videos and conference experience on Facebook, Twitter and Instagram.

Follow IPC, CSIO and the CPC for the latest on the Conference!

@Paralympics

@CSIOntario

@CDNParalympics | @CDNParalympique

## Download the official VISTA 2017 App:

1. To install this free app, open the app store
2. Search "CSIO Events" and download the app
3. Click "open"
4. You will be prompted to the event page where you will click "download" under VISTA 2017

You may also view the app online by clicking the following links:

App URL: <https://crowd.cc/s/wTqk>

Event URL: <https://crowd.cc/vista2017>



## **About Toronto, Ontario, Canada**

Toronto is one of the most multicultural cities in the world with more than 140 languages and dialects spoken. Toronto is home to over 100 different ethnic and lifestyle groups. Canada's largest city is situated on the Northern shore of Lake Ontario and has a population of 2.5 million residents, comprising one of North America's most populous, vibrant regions. It's a global centre for business, finance, arts and culture and is consistently ranked one of the world's most liveable cities. It's a four-season destination and lively in the evening with chic night spots and more than 9,000 restaurants.

Toronto is also a brainy destination – the third largest medical and biotech community in North America, Toronto is a major hub for medical and scientific research, innovation and breakthroughs. Toronto is home to more than 11,000 principal researchers and technicians that operate out of the University of Toronto Faculty of Medicine, 37 research institutes and nine teaching hospitals affiliated with the University of Toronto.

Fashion, design, music, entertainment, the arts, dining options and architecture thrive in Toronto. Ideas come together in unexpected ways and cultures fuse, resulting in some of the most extraordinary and unique experiences you will find anywhere in the world — experiences we are certain your delegates will enjoy and remember for a long time to come.

Interested in staying an extra day and visiting Niagara Falls or taking a wine tasting tour of Niagara-on-the-Lake? Want to dine at one of Toronto's great culinary restaurants? Representatives from Tourism Toronto will be set-up in Conference area at The Chelsea Hotel to answer questions and assist you in planning & booking your excursion.

Discover Toronto and its surrounding areas while celebrating Canada's 150th Anniversary in 2017! To learn more about Toronto and all the great things it has to offer visitors, please visit Tourism Toronto's website - [www.seetorontonow.com](http://www.seetorontonow.com)



## Toward an Accessible Ontario

Ontario's Accessibility for Ontarians with Disabilities Act (the Act) came into force in 2005 and sets out a clear goal and timeframe to make Ontario accessible by 2025. One in seven people in Ontario has an impairment and that number is anticipated to rise as our population ages.

Ontario is the first jurisdiction in the world to enact specific legislation establishing a goal and time-frame for accessibility. Ontario is also the first jurisdiction to make accessibility reporting the law and has established standards so people living with an impairment can enjoy increased participation in their communities. To date, these include:

1. **Accessible customer service** to ensure organisations provide goods, services or facilities in ways that take the needs of people with an impairment into account.
2. **Accessible transportation** to make it easier for people with an impairment to travel to work and enjoy recreational, shopping and entertainment venues.
3. **Accessible information and communications** to allow people with an impairment to access information that many of us rely on every day, including web sites, textbooks and business information.
4. **Accessible public spaces** to remove barriers for people with an impairment when accessing recreational trails, service counters, parking lots and outdoor play spaces.
5. **Accessible employment** to help organisations make accessibility a regular part of recruiting and supporting employees with an impairment.



## Venues

### Chelsea Hotel

33 Gerrard Street West, Toronto, ON, M5G 1Z4

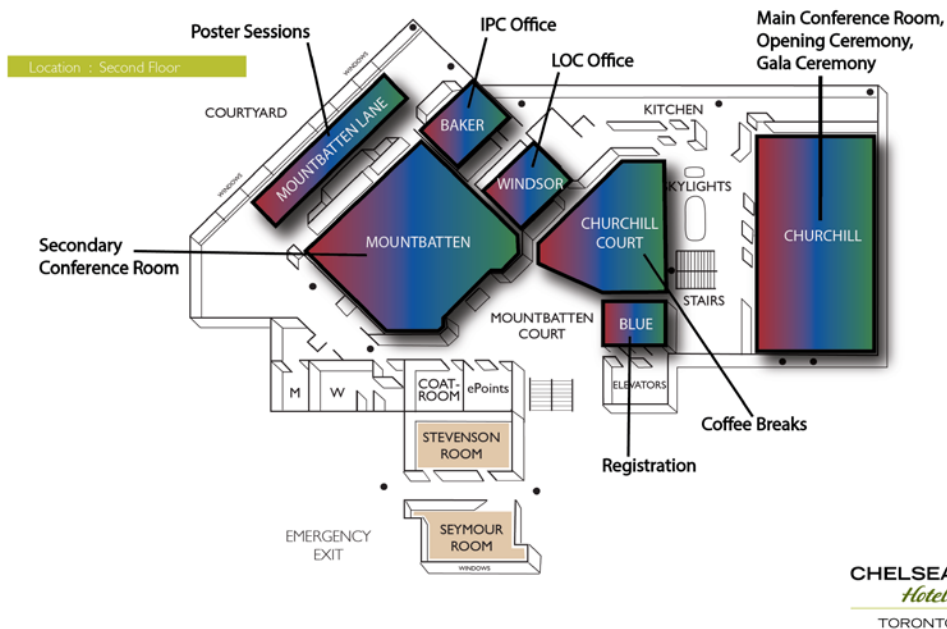
Reservations: 1-800-243-5732

Phone: +1(416)-595-1975

Website: [www.chelseatoronto.com](http://www.chelseatoronto.com)

The Chelsea Hotel is located in downtown Toronto, just steps away from the city's best shopping districts, world-class theatres, vibrant nightlife, and exciting attractions. It features 1590 contemporary guestrooms and suites, complete with complimentary Wi-Fi and warm reliable service. Amenities include three in-house restaurants, fitness center, Deck 27 indoor pool, Family Fun Zone heated pool with 130 ft. "Corkscrew" waterslide, Kid Centre, and Club 33 Teen Lounge. The outstanding service and unique range of facilities offered by the Chelsea Hotel provide travelers with comfortable accommodations and exceptional value.

The Chelsea Hotel is an accessible facility, complete with 19 accessible guestrooms and accessible fitness facilities.





## Canadian Sport Institute Ontario

875 Morningside Avenue, Suite 100,  
Toronto, ON, M1C 0C7  
Phone: 416-596-1240  
Website: [www.csiontario.ca](http://www.csiontario.ca)

The Canadian Sport Institute Ontario (CSIO) is a non-for-profit organisation committed to the pursuit of athletic excellence. CSIO strives to optimize athlete performance by providing state-of-the-art facilities, equipment, and resources. Our approach includes world-class programmes and expertise on nutrition, strength and conditioning, mental performance, physiology, biomechanics and performance analysis, and sport medicine. CSIO is recognized as a leader in the delivery of applied sport science, sport medicine, athlete/coach and staff development due to its commitment to research and innovation. This unique holistic approach allows athletes to succeed, and places more Canadians on international podiums.

CSIO programming is available to National and Provincial Sport Organisations and coaches, with the goal of building a stronger sport system in Ontario and Canada. Approximately 700 high performance athletes and 250 coaches benefit from CSIO services. Its main facility is located at the Toronto Pan Am

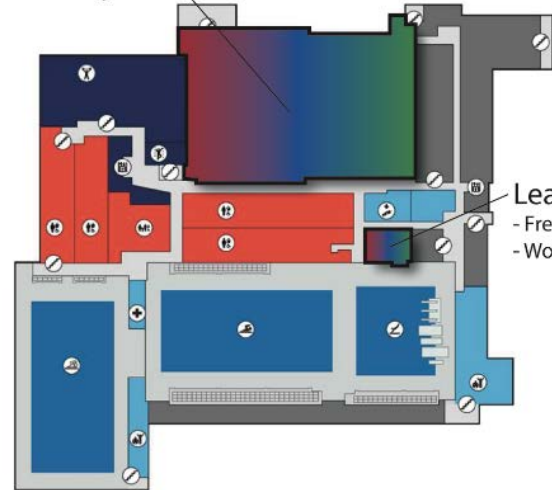
Sports Centre, and its satellite facility at the Mattamy National Cycling Centre. CSIO is part of a larger network of 4 institutes and 3 multi-sport centers across the country known as the Canadian Olympic and Paralympic Sport Institute Network. The Institutes work in partnership with the Canadian Olympic Committee and Canadian Paralympic Committee, and are further supported by

**TPASC**  
Level / Niveau

1

### Gymnasium

- Keynote Speaker + Symposium
- Morning Break

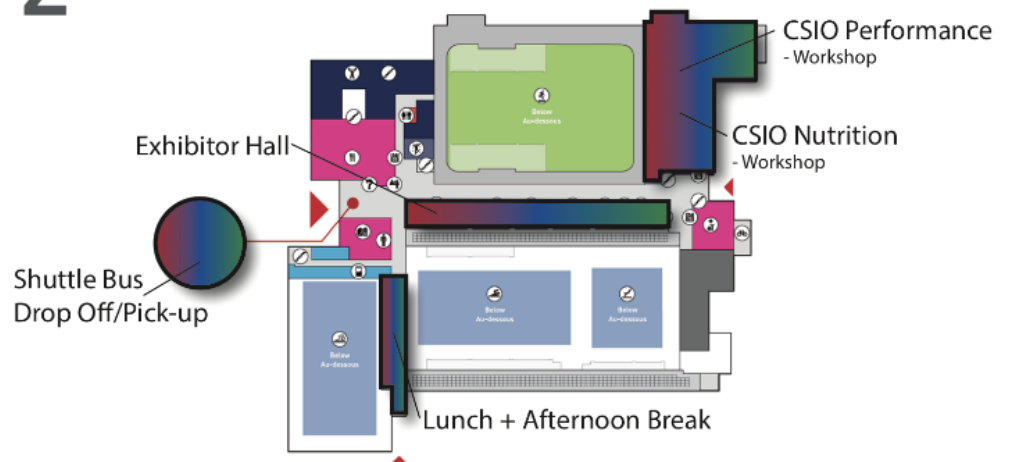


### Leadership Room

- Free Communion
- Workshop

**TPASC**  
Level / Niveau

2



### Exhibitor Hall

Shuttle Bus  
Drop Off/Pick-up

CSIO Performance  
- Workshop

CSIO Nutrition  
- Workshop

Lunch + Afternoon Break

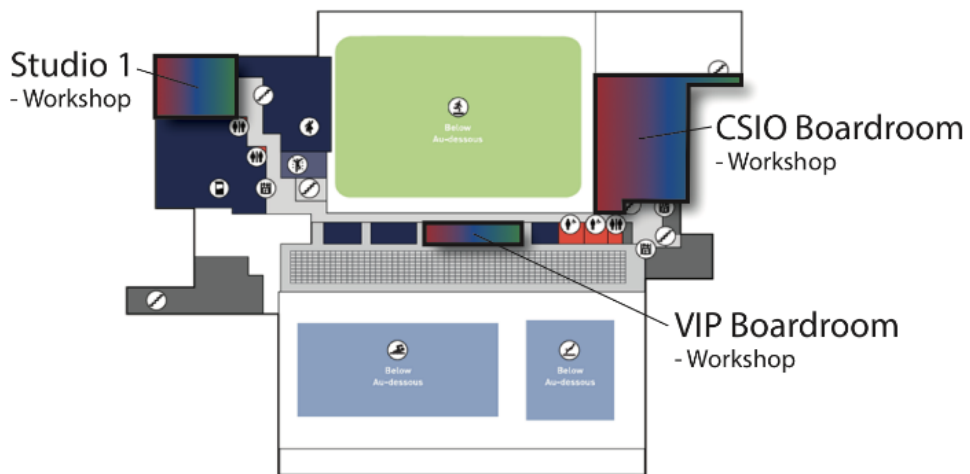


the Ministry of Tourism, Culture and Sport, Sport Canada, Own the Podium, and the Coaching Association of Canada.

Canadian Sport Institute Ontario is located at Toronto Pan Am Sports Centre (TPASC), a legacy facility of the Toronto 2015 Pan / Parapan Am Games.

The entire facility – both CSIO and the greater TPASC space, is fully accessible and built on the principles of inclusiveness. CSIO also features state-of-the-art equipment designed with Para athletes in mind, including an oversized treadmill embedded into the floor to easily accommodate wheelchair athletes, strength and conditioning equipment that allows the bench to be moved so wheelchair athletes can use the equipment in their own chair, and the Hydroworx 2000 therapy pool where the floor raises to be parallel to the ground so Para athletes, or those with injuries, can easily access the pool.

**TPASC**  
Level / Niveau  
**3**





## Programme at a Glance

| Tuesday 19 September 2017   |   |  |
|-----------------------------|---|--|
| 12:00 – 19:00               | Conference Registration<br>(Churchill Foyer)  |  |
| Wednesday 20 September 2017 |   |  |
| 09:00 – 20:00               | Conference Registration<br>(Churchill Foyer)  |  |
| 14:00 – 15:30               | <b>Invited Symposium</b><br>Making Paralympic Champions<br>(Churchill Ballroom)   | <b>Free Communications</b><br>Athlete Health and Performance<br>(Mountbatten Ballroom)   |
| 15:30 - 16:00               | Coffee Break<br>(Churchill Foyer)   |  |
| 16:00 – 17:30               | <b>Free Communications</b><br>Evidence Based Classification<br>(Churchill Ballroom)   | <b>Free Communications</b><br>Socio-Economic Determinants of<br>Paralympic Participation and Success<br>(Mountbatten Ballroom) |
| 17:30 - 18:30               | <b>Opening Ceremony</b><br>(Churchill Ballroom)   |  |
| 18:30 – 19:30               | <b>Opening Reception</b><br>(Churchill Foyer)   |  |
| Thursday 21 September 2017  |   |  |
| 08:00 – 09:00               | <b>Keynote Address</b><br>"More Than Just a Game: The Public Health Impact of Sport and Physical Activity for<br>Individuals with an Impairment"<br>Dr. Cheri Blauwet<br>(Churchill Ballroom) |  |
| 09:00 - 10:30               | <b>Invited Symposium</b><br>Evidence Based Classification in Paralympic<br>Sport<br>(Churchill Ballroom)  | <b>Free Communications</b><br>Socio-Economic Determinants of<br>Paralympic Participation and Success<br>(Mountbatten Ballroom) |
| 10:30 – 11:00               | Coffee Break<br>(Churchill Foyer)   |  |
| 11:00 – 12:30               | <b>Free Communications</b><br>Athlete Health and Performance<br>(Churchill Ballroom)  | <b>Free Communications</b><br>Novel Initiatives<br>(Mountbatten Ballroom)  |



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|---------------|--|---|
| 12:30 – 13:30 | Lunch<br>(Monarch and BB33)  |   |
| 13:30 – 15:00 | <b>Invited Symposium</b><br><b>Talent Identification and Development Program (TID) for Paralympic Sports</b><br>(Churchill Ballroom) | <b>Poster Session 1</b><br><b>Technology – Athlete Health and Performance – Socio-Economic Determinants of Paralympic Participation and Success</b><br>(Mountbatten Lane)             |
| 15:00-15:30   | Coffee Break<br>(Churchill Foyer)  |   |
| 15:30 – 17:00 | <b>Free Communications Evidence Based Classification</b><br>(Churchill Ballroom)   | <b>Poster Session 1 (continued)</b><br><b>Technology – Athlete Health and Performance – Socio-Economic Determinants of Paralympic Participation and Success</b><br>(Mountbatten Lane) |
| 18:00 – 20:00 | <b>MaRs Reception</b><br>(MaRs Discovery District)   |   |

| Friday 22 September 2017 |   |   |
|--------------------------|---|---|
| 08:00 – 09:00            | <b>Keynote Address</b><br><b>“Technology and the Paralympics: Current Capabilities and Future Possibilities”</b><br>Dr. Rory Cooper<br>(Churchill Ballroom) |   |
| 09:00 - 10:30            | <b>Invited Symposium</b><br><b>The Canadian Integrated Support Team Model</b><br>(Churchill Ballroom)   | <b>Free Communications</b><br><b>Athlete Health and Performance</b><br>(Mountbatten Ballroom)   |
| 10:30 – 11:00            | Coffee Break<br>(Churchill Foyer)   |   |
| 11:00 – 12:30            | <b>Free Communications</b><br><b>Novel Initiatives</b><br>(Churchill Ballroom)  | <b>Poster Session 2</b><br><b>Evidence-Based Classification – Athlete and Coach Education – Integrated Approaches - Other</b><br>(Mountbatten Lane) |
| 12:30 – 13:30            | Lunch<br>(Monarch and BB33)   |   |
| 13:30 – 15:00            | <b>Free Communications</b><br><b>Technology</b><br>(Churchill Ballroom)   | <b>Poster Session 2 (continued)</b><br><b>Evidence-Based Classification – Athlete and Coach Education – Integrated Approaches - Other</b>           |



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|---------------|--|---|
|               |  | (Mountbatten Lane)  |
| 15:00 - 15:30 | Coffee Break<br>(Churchill Foyer)  |   |
| 15:30 - 17:00 | <b>Invited Symposium</b><br><b>Maximizing Athletes' Performance - Facts and Concerns</b><br>(Churchill Ballroom) | <b>Free Communications</b><br><b>Athlete Health and Performance</b><br>(Mountbatten Room) |
| 19:00 - 22:00 | Gala Ceremony<br>(Churchill Ballroom)  |   |

| Saturday 23 September 2017 |  |  |   |  |   |  |
|----------------------------|--|--|---|--|---|--|
| 07:45                      | Load buses to travel to CSIO   |  |   |  |   |  |
| 09:00 - 10:00              | <b>Keynote Address</b><br><b>"The Paralympic Games and Social Impact: Beyond the Rhetoric"</b><br><b>Dr. Laura Misener</b><br>(TPASC Fieldhouse) |  |   |  |   |  |
| 10:00 - 10:30              | Coffee Break<br>(TPASC Fieldhouse)   |  |   |  |   |  |
| 10:30 - 12:30              | <b>Invited Symposium</b><br><b>Athlete and Coach Education</b><br>(TPASC Fieldhouse)   | <b>Free Communications Evidence Based Classifications</b><br>(Leadership Room) |   |  |   |  |
| 12:00 - 13:00              | Lunch Break<br>(Pool Hallway)  |  |   |  |   |  |
| 13:00 - 13:50              | <b>Workshops (First Come, First Serve)</b>   |  |   |  |   |  |
|                            | <b>Bone Health in Paralympians</b><br>(Leadership Room)  | <b>Career Transition - Game Plan</b><br>(CSIO Boardroom)                       | <b>Adapted Strength &amp; Conditioning for Wheelchair Sports</b><br>(CSIO S&C Centre) | <b>Adapted Cooking</b><br>(CSIO Kitchen) | <b>Psychological Recovery Modalities</b><br>(Studio1) | <b>Accessibility and the Power of Sport</b><br>(VIP Boardroom) |
| 14:00 - 14:50              | <b>Workshops (First Come, First Serve)</b>   |  |   |  |   |  |
|                            | <b>Bone Health in Paralympians</b><br>(Leadership Room)  | <b>Career Transition - Game Plan</b><br>(CSIO Boardroom)                       | <b>Adapted Strength &amp; Conditioning for Wheelchair Sports</b><br>(CSIO S&C Centre) | <b>Adapted Cooking</b><br>(CSIO Kitchen) | <b>Psychological Recovery Modalities</b><br>(Studio1) | <b>Accessibility and the Power of Sport</b><br>(VIP Boardroom) |



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|---------------|---|---|--|--|---|
| 14:50 – 15:20 | Coffee Break<br>(Pool Hallway)                                    |   |  |  |   |
| 15:20 – 16:10 | <b>Workshops</b> (First Come, First Serve)                        |   |  |  |   |
|               | <b>Paralympic Sport Ethics and Integrity</b><br>(Leadership Room) | <b>Therapy Modalities for Paraspport Athletes</b><br>(CSIO Boardroom)                     | <b>Wheelchair Ergometer</b><br>(CSIO S&C Centre) | <b>Adapted Cooking</b><br>(CSIO Kitchen) | <b>NPCs as Drivers for Athlete Education – Proud Paralympian</b><br>(Studio1) |
| 16:20 – 17:10 | <b>Workshops</b> (First Come, First Serve)                        |   |  |  |   |
|               | <b>Paralympic Sport Ethics and Integrity</b><br>(Leadership Room) | <b>Therapy Modalities for Paraspport Athletes</b><br>(CSIO Boardroom / Hydrotherapy Room) | <b>Wheelchair Ergometer</b><br>(CSIO S&C Centre) | <b>Adapted Cooking</b><br>(CSIO Kitchen) | <b>NPCs as Drivers for Athlete Education – Proud Paralympian</b><br>(Studio1) |
| 17:10         | Transfer to Hotel / Airport                                       |   |  |  |   |



## Detailed Programme

### Tuesday 19 September

|               |  |
|---------------|--|
| 12:00 – 19:00 | Conference Registration<br>Registration desk, Level 2, Chelsea Hotel |
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### Wednesday 20 September

|                                    |   |
|------------------------------------|---|
|                                    | Conference Registration<br>Registration desk, Level 2, Chelsea Hotel  |
| 14:00 – 15:30<br>Churchill Foyer   | <b>INVITED SYMPOSIUM</b><br><b>“Making Paralympic Champions”</b>  |
|                                    | Speakers: David Howe (Loughborough University, UK); Anjali Forber-Pratt (Vanderbilt University, USA); Sabine Radtke (Universität Paderborn, GER)<br>Chairperson: David Legg, IPC Sports Science Committee (CAN) |
|                                    |   |
| 14:00 – 15:15<br>Mountbatten Foyer | <b>FREE COMMUNICATIONS – Athlete Health and Performance</b>   |
| 14:00 – 14:15                      | Relationships between internal and external training loads in handcyclists (#33)<br>de Groot; Hoekstra; Grandjean Perrenod Comtesse; Kouwijzer; Valent  |
| 14:15 – 14:30                      | Improving mobility performance in wheelchair basketball (#51)<br>Hoozemans; Veeger; Berger; van der Slikke; Veeger; de Witte  |
| 14:30 – 14:45                      | Effect of trunk muscle activation on trunk stability, arm power, and performance in wheelchair rugby players with a spinal cord injury (#60)<br>Janssen; Kouwijzer, van der Meer                                |
| 14:45 – 15:00                      | Understanding propulsive shoulder forces and scapular kinematics during manual wheelchair use (#128)<br>Vegter; Paulson; Morrissey; Mason; Leving; van der Scheer; Bru; van der Woude; Tolfrey-Goosey           |
| 15:00 – 15:15                      | Shoulder internal and external range of motion and position sense of sitting volleyball players versus healthy players and non-athletes (#136)<br>Zandi; Yazdanpanah  |
|                                    |   |
| 15:30 – 16:00<br>Churchill Foyer   | Coffee Break  |
|                                    |   |





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| 16:00 – 17:15<br>Churchill<br>Ballroom   | <b>FREE COMMUNICATIONS – Evidence Based Classification</b>  |
| 16:00 – 16:15                            | A position stand guiding the sport-specific classification of athletes with vision impairment: What you need to know (#74)<br>Mann; Ravensbergen  |
| 16:15 – 16:30                            | Detecting intentional misrepresentation when testing vision for classification (#106)<br>Ravensbergen; de Bree; Broekens; Mann  |
| 16:30 – 16:45                            | Setting the classification standards for Para-shooters with vision impairment (#5)<br>Allen; Latham; Mann; Ravensbergen; Myint  |
| 16:45 – 17:00                            | Visual function of Para Alpine and Para Nordic skiers with visual impairment (#30)<br>Creese; Stalin; Leat; Thompson; Dalton  |
| 17:00 – 17:15                            | Investigation of motion perception in elite skiers with visual impairment (#116)<br>Stalin; Creese; Roberts; Thompson; Leat; Dalton   |
| 17:15-17:30                              | Expert consensus for the evidence based classification of vision impairment in Judo (#67)<br>Krabben  |
| 16:00 – 17:00<br>Mountbatten<br>Ballroom | <b>FREE COMMUNICATIONS – Socio-Economic Determinants of Paralympic Participation and Success</b>  |
| 16:00 – 16:15                            | Pathways to the Paralympic Games: Sporting journeys of New Zealand Para athletes with a limb deficiency (#131)<br>Wilson; Hogg; Millar; Walters   |
| 16:15 – 16:30                            | The impact of continental association affiliation and inequality-adjusted human development index level on NPC team size, gender split and medal success at the summer and winter Paralympic Games (#22)<br>Brittain; Mashkovskiy |
| 16:30 – 16:45                            | Doing a Brazilian: lessons on culture and community from Rio 2016 (#52)<br>Howe; Silva  |
| 16:45 – 17:00                            | Understanding Paralympic Athletes' Pathways: a preliminary investigation (#97)<br>Patatas; De Bosscher  |
| 17:30 – 18:30<br>Churchill<br>Ballroom   | <b>Opening Ceremony</b>   |
| 18:30 – 19:30<br>Churchill Foyer         | <b>Opening Reception</b>  |



## Thursday 21 September

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| 08:00 – 09:00<br>Churchill<br>Ballroom   | <b>KEYNOTE ADDRESS</b><br>"More Than Just a Game: The Public Health Impact of Sport and Physical Activity for Individuals with an Impairment"<br>Dr. Cheri Blauwet, Harvard Medical School, USA                                |
| 09:00 - 10:30<br>Churchill<br>Ballroom   | <b>INVITED SYMPOSIUM</b><br>"Evidence-Based Classification in Paralympic Sport"  |
|  | Speakers: Raul Reina (University of Elche, ESP); Florentina Hettinga (University of Essex, UK); Rianne Ravensbergen (Vrije Universiteit Amsterdam, NED)<br>Chairperson: Yves Vanlandewijck, IPC Sports Science Committee (BEL) |
| 09:00 – 10:00<br>Mountbatten<br>Ballroom | <b>FREE COMMUNICATIONS – Socio-Economic Determinants of Paralympic Participation and Success</b>   |
| 09:00 – 09:15                            | Assessment of a sport socialization intervention programme on social skill learning of children with intellectual disability in Kakamega, Kenya (#3)<br>Odiango; Bukhala; Nguka  |
| 09:15 – 09:30                            | Determinants of participation in Paralympic sports among athletes with disabilities in developing nations. The case of Kenya, Uganda and Tanzania (#24)<br>Bukhala; Legg; Higgs  |
| 09:30 – 09:45                            | A framework for implementing Adapted Athletics programs in Australian Universities (#65)<br>Kean; Oprescu; Verdonck; Gray; Burkett   |
| 09:45 – 10:00                            | Factors determining successful organization and participation of Special Schools Sports in Trans Nzoia Region, Kenya (#111)<br>Sabiri; Bukhala   |
| 10:30 – 11:00<br>Churchill Foyer         | Coffee Break   |
| 11:00 – 12:00<br>Churchill<br>Ballroom   | <b>FREE COMMUNICATIONS – Athlete Health and Performance</b>  |
| 11:00 – 11:15                            | Quality participation in Para sport: A narrative perspective (#4)<br>Allan; Smith; Côté; Ginis; Latimer-Cheung   |
| 11:15 – 11:30                            | Issues pertaining to development of athletes with a disability (#34)<br>Dehghansai; Lemez; Wattie; Baker   |



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| 11:30 – 11:45                         | Let me hear your body talk: Narratives of sport physiotherapy and Paralympic bodies (#103)<br>Quinn   |
| 11:45-12:00                           | A 10-year analysis of fight outcomes between athletes of different classes in the Paralympic judo (#76)<br>Mashkovskiy  |
| 11:00 – 12:15<br>Mountbatten Ballroom | <b>FREE COMMUNICATIONS – Novel Initiatives</b>  |
| 11:00 – 11:15                         | A comparison of 3 v 3 wheelchair basketball game formats for inclusion at the Commonwealth Games: a multidisciplinary approach (#77)<br>Mason; van der Slikke; Berger; Goosey-Tolfrey   |
| 11:15 – 11:30                         | The PAPA-model: a promising tool to increase sports participation and physical activity levels of children and young people with disabilities (#110)<br>Saari; Skantz   |
| 11:30 – 11:45                         | Lessons from DoD Warrior Games: Challenges adopting Paralympic classification to Military Adaptive Sports (#72)<br>Lucarevic; Danberg; Fowler   |
| 11:45 – 12:00                         | “We’re the Superhumans”: Print and online media representation of the Rio 2016 Paralympics (#79)<br>McGillivray; McPherson; Misener; O’Donnell  |
| 12:00 – 12:15                         | Inclusive skating: a case study in the social and economic challenges and opportunities that arise when creating new Paralympic sports and the lessons to be learned for future development (#118)<br>Sweeney-Baird   |
| 12:30 – 13:30<br>Monarch and BB33     | Lunch Break   |
| 13:30 – 15:00<br>Churchill Ballroom   | <b>INVITED SYMPOSIUM</b><br><b>Talent Identification and development (TID) program for Paralympic sports</b>  |
|                                       | Speakers: Joseph Baker (York University Toronto, CAN); Taisuke Kinugasa (Japan Sports Council); Martin Lam (Hong Kong Paralympic Committee & Sports Association for the Physically Disabled)<br>Chairperson: Raymond So, IPC Sports Science Committee (HKG) |
| 13:30 – 15:00                         | <b>POSTER SESSION 1</b>   |



| Mountbatten Lane | <b>Technology – Athlete Health and Performance – Socio-Economic Determinants of Paralympic Participation and Success</b>   |
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|                  | <p>*: poster presenters will be present during the session 13:30-15:00</p> <p><u>Technology</u></p> <p>*Equi+poise gait analysis system (#31)<br/>Daniels</p> <p>*Paralympic Boccia app (#40)<br/>Gomes de Freitas; Resende Davi</p> <p>*Validating the catapult S5 accelerometer (#47)<br/>Haringsma; Rumpf; Slikke</p> <p>*Biomechanical effect of robotic exercise for Boccia players (#49)<br/>Htanaka; Okuda; Yamaguchi; Tada; Kataoka; Saito</p> <p>*Difference in muscle activation pattern and joint kinematics of upper limb between elite and recreational wheelchair athletes during wheelchair sprint (#64)<br/>Kawabata; Mitsui; Ibusuki; Nishimura; Kamijo; Tajima</p> <p>*Forward dynamic optimization of Paralympic Wheelchair Curling (#69)<br/>Laschowski; Mehrabi; McPhee</p> <p>*Sport wheelchair installation and its effect on joint loading and push performance (#85)<br/>Musalem; Frayne</p> <p>Representative test design and individual analysis in wheelchair rugby (#102)<br/>Haydon; Pinder; Grimshaw; Robertson</p> <p><u>Socio-Economic Determinants of Paralympic Participation and Success</u></p> <p>*Exploring psychosocial factors of athletes' transition into Para sport (#10)<br/>Arbour-Nicitopoulos; Bassett-Gunter; Sprenger; Camick; Goss</p> <p>*Socio-economic determinants of Paralympic participation and success: An African perspective (#19)<br/>Ma-Biloloo</p> <p>*Profile of the athlete's participation on the first Brazilian Paralympic Games for university students (#26)<br/>Calegari; Senatore; Dhiel Nogueira; Campeao; Irineu Gorla; Brandao Vieira</p> <p>*The Paralympic world powers: An analysis of the medals claimed at Tio 2016 Paralympic Games (#98)<br/>de Castro Haiachi; Martins Patatas; Cirilo dos Santos Neto</p> |



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| 15:00 – 15:30<br>Churchill Foyer    | Coffee Break  |
| 15:30 – 17:00<br>Churchill Ballroom | <b>FREE COMMUNICATIONS – Evidence Based Classification</b>  |
| 15:30 – 15:45                       | Impact of limb deficiency impairment on Paralympic swimming performance: A step toward evidence-based classification (#50)<br>Hogarth; Payton; Van de Vliet; Jarvis; Burkett  |
| 15:45 – 16:00                       | Para Swimming start performance: is the current classification system fit for purpose? (#61)<br>Jarvis; Payton; Hogarth; Burkett  |
| 16:00 – 16:15                       | Relationship between passive drag and front crawl performance time of Para swimmers (#93)<br>Oh; Payton   |
| 16:15-16:30                         | Development of two evidence-based classification systems for Para Canoe (#20)<br>Bjerkefors; Rosen; Tarassova; Arndt  |
| 16:30 – 16:45                       | Defining key joints for performance in va'a paddling: The first step in creating a sport-specific evidence-based classification system for para-va'a (#108)<br>Rosen; Arndt; Goosey-Tolfrey; Mason; Hutchinson; Tarassova; Bjerkefors   |
| 16:45 – 17:00                       | Evidence-based classification: Testing a performance indicator for Para World Sailing (#109)<br>Ross; Wilson  |
| 15:30 – 17:00<br>Mountbatten Lane   | <b>POSTER SESSION 1 – continued</b><br><b>Technology – Athlete Health and Performance – Socio-Economic Determinants of Paralympic Participation and Success</b>   |
|                                     | **; poster presenters will be present during the session 15:30 – 17:00<br><u>Technology</u><br>**Wayfinding and assistive technologies that support Paralympic athletes and the Paralympic community and Games attendees informed by universal design (#117)<br>Swanson<br><br><u>Athlete Health and Performance</u><br>**Maximal relative strength and power correlated to linear acceleration over 20m in female wheelchair basketball players (#27)<br>Cochran; Hathaway<br>**The trunk: Strength ratios / strength in German elite Para Badminton |



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|               | <p>players (standing classes and wheelchair classes) (#37)<br/>Felder; Geise; Froehlich</p> <p>**Sports clinic for athletes with disabilities in Taiwan (#53)<br/>Hsieh; Lin</p> <p>**Treating elbow locking in Para Table Tennis sitting athlete (#54)<br/>Hsiek</p> <p>**Thirst sensation can be used to identify moderate hypohydration in athletes with a visual impairment (#56)<br/>Hutchinson; Graham-Paulson; Goosey-Tolfrey</p> <p>**A study on auditory reaction time and accuracy of auditory spatial localization in blind football players (#80)<br/>Mieda; Kokubu; Saito</p> <p>**Heart rate variability in athletes of the Brazilian CP Football team: A pilot study (#88)<br/>Nogueira; Vieira; Calegari; Vital; Campeao; Gorla</p> <p>**Intimal carotid thickness and body fat percentage in athletes of the Brazilian Boccia Paralympic team: A pilot study (#89)<br/>Campeao; Vieira; Calegari; Nogueira; Gorla</p> <p>**Relationship between throwing distance and performance of Boccia players with cerebral palsy (#94)<br/>Okuda; Kataoka; Shima; Okahara; Sone; Hatanaka</p> <p>**Why spiritual health is a necessity for Para athletes? (#104)<br/>Rakhshani</p> <p>**Effect of mandible position in direction and force of ball throwing in Paralympic Boccia (#107)<br/>Davi; Martins; Neto; Simamoto Junior; Leite; de Freitas</p> <p>**Exploring perceptions of sport professionals with a physical disability: Content analysis (#119)<br/>Tennant; Stone; MacDonals; Martin-Ginis; Perrier; Sweet; Latimer-Cheung</p> |
| 18:00 – 20:00 | <p><b>MaRs Reception</b><br/>Meet in Chelsea Hotel Lobby beginning from 17:30 to 18:15 to be escorted to the MaRs Discovery District.<br/>(MaRs Discovery District)</p>   |



Friday 22 September 2017

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| 08:00 – 09:00<br>Churchill<br>Ballroom   | <b>KEYNOTE ADDRESS</b><br>"Technology and the Paralympics: Current Capabilities and Future Possibilities"<br>Dr. Rory Cooper, Department of Rehabilitation Science & Technology, University of Pittsburgh, USA     |
| 09:00 – 10:30<br>Churchill<br>Ballroom   | <b>INVITED SYMPOSIUM</b><br><b>The Canadian Integrated Support Team Model</b>  |
|  | Speakers: Bruce Craven (Craven Sport Services, CAN); Jared Fletcher (University of Calgary, CAN); Mike Frogley (Wheelchair Basketball Canada, CAN)<br>Chairperson: Jon Kolb, Own the Podium, CAN                   |
| 09:00 – 10:30<br>Mountbatten<br>Ballroom | <b>FREE COMMUNICATIONS – Athlete Health and Performance</b>  |
| 09:00 – 09:15                            | An analysis of female athlete triad risk factors in elite Para athletes (#21)<br>Blauwet; Brook; Tenforde; Broad; Matzkin  |
| 09:15 – 09:30                            | Usability and feasibility of a novel eHealth application for self-reports of sport-related injuries and illnesses in Paralympic sport (#35)<br>Fagher; Jacobsson; Dahlström; Timpka; Lexell                        |
| 09:30 – 09:45                            | Head impact of slalom gates on Paralympic Alpine sit-skiers: A pilot study (#43)<br>Goll; Spitzenfeil; Frühschütz; Olvermann; Reisinger  |
| 09:45 – 10:00                            | Physical examination findings of elbow joints in Para athletes participating in Oita international wheelchair marathon race from 2013 to 2015 (#92)<br>Ogawa; Nishimura; Ibusuki; Kakita; Sasaki; Nakamura; Tajima |
| 10:00 – 10:15                            | The evaluation of muscle balance using two different methodologies in Athletics Paralympic athletes (#133)<br>Winckler; Meloni; Loturco; Kobal   |
| 10:15 – 10:30                            | Investigating the clinical effects of performance-focused swimming training for people with cerebral palsy: A pilot study (#35)<br>Dutia; Connick; Beckman; Johnston; Tweedy                                       |
| 10:30 – 11:00<br>Churchill<br>Ballroom   | Coffee Break   |





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| 11:00 – 12:15<br>Churchill<br>Ballroom | <b>FREE COMMUNICATIONS – Novel Activities</b>  |
| 11:00 – 11:15                          | Wheelchair tennis skill development, court-movement and physiological cost: effects of organised practice (#113)<br>Sindall; Lenton; Mason; Tolfrey; Cooper; Oyster; Ginis; Goosey-Tolfrey   |
| 11:15 – 11:30                          | Integration of skill acquisition support: case-studies in Paralympic sport (#101)<br>Pinder  |
| 11:30 – 11:45                          | Using an online peer learning group to support the development of a Para sport coaching community (#120)<br>Duarte; Paquette; Culver   |
| 11:45 – 12:00                          | Validity, reliability and sensitivity to change of the basketball wheelchair mobility performance test (#16)<br>Berger; de Witte; Hoozemans; van der Slikke; Veeger; van der Woude   |
| 12:00 – 12:15                          | Comparison of rolling athletes' leg times to runners' in a running relay – A multivariate approach (#32)<br>Danvind; Skoglund; Nilsson; Ohlsson  |
| 11:00 – 12:30<br>Mountbatten<br>Lane   | <b>POSTER SESSION 2</b><br><b>Evidence-Based Classification – Athlete and Coach Education – Integrated Approaches – Other</b>  |
|  | <p>*: poster presenters will be present during the session 11:00-12:30</p> <p><u>Evidence-Based Classification</u></p> <p>*A qualitative audit of outcomes of national vs international classification of British athletes (2012-2016) (#6)<br/>Broomhead; Allen</p> <p>*Factors influencing evolution of classification and technical rules in Para sports (#23)<br/>Brittain; Mashkovskiy</p> <p>*Declassified: Disability identities and the Paralympic classification system (#25)<br/>Bundon; Ashfield; Hunton; Smith; Diaper; Goosey-Tolfrey</p> <p>*Comparing visual function of visually impaired skiers in different lighting conditions (#29)<br/>Creese; Stalin; Leat; Dalton</p> <p>*A quantitative volume of action measurement for wheelchair basketball (#39)<br/>Frayne; McHardi</p> <p>*What is happening beyond the classification room? A holistic approach</p> |



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|  | <p>to classification in the Para sports (#75)<br/>Mashkovskiy; Brittain</p> <p>*Standardised athletic performance testing and sport-specific assessment in Para-Taekwondo: Application to classification and evaluating athlete misrepresentation (#91)<br/>O’ Sullivan; Fife</p> <p>*Developing evidence-based classification for swimmers with vision impairment (#105)<br/>Ravensbergen; Allen; Mann</p> <p>* Determining Cut-off Score for Functional Testing in Para Badminton Lower Limb Impairment Sport Class (#112)<br/>Shah; Konchalard; Amin; Baharom; Felder</p> <p>*The effect of classification on wheelchair mobility performance in wheelchair basketball (#127)<br/>van der Slikke; Berger; Bregman; de Witte; Veeger</p> <p>*The impact of lower limb impairment on Racercycling athletes’ ability to accelerate and run at speed during the 100m sprint (#129)<br/>Verheul; Tennant; Jahed; Van der Linden</p> <p>*Investigating the permanence and significance of impairment to strength and range of motion in individuals with a lower limb megaprosthesis – A pilot study (#132)<br/>Wilson; Beckman; Carty; Steadman; Tweedy</p> <p>*Inter-rater reliability between national and international classification in Brazilian wheelchair Rugby players. (#9)<br/>A. Gatti; VC. Altmann; L. Teixeira; H. Seren; R. Marçal.</p> |
| 12:30 – 13:30<br>Monarch and<br>BB33   | Lunch Break  |
| 13:30 – 14:30<br>Churchill<br>Ballroom | <b>FREE COMMUNICATIONS – Technology</b>  |
| 13:30 – 13:45                          | Speed profiles in wheelchair court sports: Comparison of two common methods for measuring wheelchair mobility performance (#126)<br>van der Slikke; Mason; Berger; Goosey-Tolfrey  |
| 13:45 – 14:00                          | Modelling shooting performance across major international tournaments in elite men’s wheelchair basketball (#38)<br>Francis; Owen; Molnar; Peters  |
| 14:00 – 14:15                          | Kinematic responses of a novice swimmer with moderate cerebral palsy to a performance-focused swimming program – A pilot study (#73)<br>Macarot; Tweedy; Beckman; Connick  |



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| 14:15 – 14:30                     | Biomechanics of seated throwing: Kinematic contributions of upper limb (#90)<br>O’Riordan; Greenhalgh; Frossard; Miller   |
| 13:30 – 15:00<br>Mountbatten Lane | <b>POSTER SESSION 2 – continued</b><br><b>Evidence-Based Classification – Athlete and Coach Education – Integrated Approaches – Other</b>   |
|                                   | <p>** : poster presenters will be present during the session 13:30-15:00</p> <p><u>Athlete and Coach Education</u></p> <p>**Test of Gross Motor Development-3 (TGM-3) with the use of visual supports for children with autism-spectrum disorder: Validity and Reliability (#7)<br/>Allen; Bredero; Van Damme; Ulrich; Simons</p> <p>**Practical knowledge of a blind football goalkeeper applied to verbal instructions (#48)<br/>Hashiguchi; Otake; Isano; Sakamoto; Kanno</p> <p>**A study of the spatial perception of Japanese blind football players (#58)<br/>Isano; Hashiguchi; Otake; Sakamoto</p> <p>**Lessons from DoD Warrior Games: Challenges preparing tactical athletes for Paralympic field event competition (#71)<br/>Danberg; Lucarevic</p> <p>**Reviewing long term athlete development for Para sport athletes: Considerations and future directions (#96)<br/>Paradis; Misener</p> <p><u>Integrated Approaches</u></p> <p>**Outcome of the integration of Para Cycling at UCI and national cycling federations after ten years (#13)<br/>Barbeau</p> <p>**Maximizing sporting performances throughout interactions between sports medicine and sports science in Boccia BC4 athlete gold medalist for 2016 Rio Paralympic Games (#68)<br/>Lam Chun Ying</p> <p>**Integrated governance in Canadian sport: A case study of Swimming (#82)<br/>Misener; Bodin; Kay</p> <p>**Psychological and social problems in initiation and development stage of career development among elite Japanese Para athletes (#121)<br/>Uchida; Fukaya</p> |



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|                                     | <p><u>Other</u></p> <p>**Developing a Para Dance Sport national classifier database: A Canadian journey (#45)<br/>Gulasingam; Newell; Kulbatski</p> <p>**Career decision-making process of us and Japanese Paralympians (#59)<br/>Itoh; Hums; Ogasawara; Arai</p> <p>**The interpersonal communication of elite Goalball athletes: A qualitative study (#62)<br/>Jenks; Jenks</p> <p>**The conceptualisation of medical and health legacies (#63)<br/>Jung; Tajima; Chappellet</p> <p>**The profile of scientific production on Paralympic sport (#115)<br/>De Souza</p> |
| 15:00 – 15:30<br>Churchill Foyer    | Coffee Break   |
| 15:30 – 17:00<br>Churchill Ballroom | <p><b>INVITED SYMPOSIUM</b></p> <p><b>Maximizing athletes' performance – Facts and Concerns</b></p>  |
|                                     | <p>Speakers: Cindy Chang (University of California, USA); Hiroaki Hobara (National Institute of Advanced Industrial Science and Technology, JPN); Michael McNamee (Swansea University, UK)</p> <p>Chairperson: Osnat Fliess-Douer, IPC Sports Science Committee (ISR)</p>  |
| 15:30 – 17:00<br>Mountbatten Room   | <p><b>FREE COMMUNICATIONS – Athlete Health and Performance</b></p>   |
| 15:30 – 15:45                       | <p>Cardiovascular responses to heat acclimatization in athletes with spinal cord injury (#41)<br/>Gee; Lacroix; Pethick; Côté; Stellingwerff; West</p>   |
| 15:45 – 16:00                       | <p>Relationship between physiological parameters and Para Triathlon performance in well-trained athletes (#44)<br/>Goosey-Tolfrey; Shill; Stephenson; Lenton</p>   |
| 16:00 – 16:15                       | <p>A maximal perceptually-regulated exercise test is a reliable and valid for measuring peak oxygen uptake during arm crank ergometry in manual wheelchair user (#55)<br/>Hutchinson; Valentino; MacDonald; Eston; Goosey-Tolfrey</p>  |
| 16:15 – 16:30                       | <p>Predictive models and reference values for peak power output during handcycling in people with a chronic spinal cord injury (#57)</p>   |



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|  | Kouwijzer; Valent; Osterthun; van der Woude; de Groot   |
| 16:30 – 16:45                          | Salivary biomarkers and training load in training and major competition: A case study of 4 Paralympic swimmers (#114)<br>Sinnott-O'Connor; Comyns; Nevill; Warrington |
| 16:45 – 17:00                          | The acute physiological and metabolic responses of individuals with Cerebral Palsy to racetraining training (#130)<br>Phillips; Turner; Lousada; Verheul              |
|  |   |
| 19:00 – 22:00<br>Churchill<br>Ballroom | Gala Ceremony   |



## Saturday, 23 September

|                                      |  |
|--------------------------------------|--|
| 09:00 – 10:00<br>TPASC<br>Fieldhouse | <b>KEYNOTE ADDRESS</b><br>“The Paralympic Games and Social Impact: Beyond the Rethoric”<br>Dr. Laura Misener, University of Western Ontario, CAN   |
| 10:00 – 10:30<br>TPASC<br>Fieldhouse | Coffee Break   |
| 10:30 – 12:00<br>TPASC<br>Fieldhouse | <b>INVITED SYMPOSIUM</b><br><b>Athlete and Coach Education</b>   |
|                                      | Speakers: Marco Tulio de Mello (University of Minas Gerais, Brasil); Joelle Leonie Flueck (Swiss Paraplegic Centre, SUI); Stephen Cheung (Brock University, CAN)<br>Chairperson: Heather Logan-Sprenger, Canadian Sport Institute Ontario, CAN     |
| 10:30 – 12:15<br>Leadership<br>Room  | <b>FREE COMMUNICATIONS – Evidence-Based Classification</b>   |
| 10:30 – 10:45                        | Impact of trunk and arm impairment on performance of wheelchair and ball activities in wheelchair rugby during competition (#8)<br>Altmann; Mason; Goosey-Tolfrey  |
| 10:45 – 11:00                        | Validation of arm coordination impairment tests for wheelchair rugby classification (#123)<br>Groeneweg; Altmann; Groen; Keijsers  |
| 11:00 – 11:15                        | Validation of a class allocation model for wheelchair track athletes with impaired strength – A proof of concept study (#28)<br>Connick; Beckman; Tweedy   |
| 11:15 – 11:30                        | The influence of lower limb impairments on racerunning performance in athletes with hypertonia, ataxia and athetosis: Towards an evidence-based classification of racerunning as a Para Athletics event (#125)<br>van der Linden; Verheul; Tennant |
| 11:30 – 11:45                        | How the cognitive-motor dual-task paradigm can contribute to the development of evidence-based classification systems for athletes with intellectual impairment (#124)<br>Van Biesen; Jacobs; McCulloch; Pineda; Vanlandewijck                     |



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| 11:45 – 12:00                 | Adaptive behaviour assessment in the classification system for athletes with intellectual impairment – Do we need it? (#78)<br>McCulloch; Van Biesen; Noens; Vanlandewijck |
| 12:00 – 12:15                 | A classification model for Paralympic clay target shooting (#18)<br>Bernardi; Summa; Alvit; Fazi; Barberini; Camomilla   |
| 12:00 – 13:00<br>Pool Hallway | Lunch Break  |
| 13:00 – 13:50                 | <b>WORKSHOPS</b>   |
| CSIO Board Room               | <b>Career transition- Game plan (50 persons)</b><br>Presenter: Wagschal  |
| Studio 1                      | <b>Psychological recovery modalities (60 persons)</b><br>Presenter: Goss   |
| CSIO S&C                      | <b>Adapted strength &amp; conditioning for wheelchair sports (30 persons)</b><br>Presenter: Hathaway   |
| Leadership Room               | <b>Bone health in Paralympians (75 persons)</b><br>Presenter: Craven   |
| CSIO Kitchen                  | <b>Adaptive cooking (20 persons)</b><br>Presenter: Springle  |
| VIP Boardroom                 | <b>Accessibility and the power of sport (60 persons)</b><br>Presenter: Spencer   |
| 14:00 – 14:50                 | <b>WORKSHOPS</b>   |
| CSIO Board Room               | <b>Career transition - Game Plan (50 persons)</b><br>Presenter: Wagschal   |
| Studio 1                      | <b>Psychological recovery modalities (60 persons)</b><br>Presenter: Goss   |
| CSIO S&C                      | <b>Adapted strength &amp; conditioning for wheelchair sports (30 persons)</b><br>Presenter: Hathaway   |
| Leadership Room               | <b>Bone health in Paralympians (75 persons)</b><br>Presenter: Craven   |
| CSIO Kitchen                  | <b>Adaptive cooking (20 persons)</b><br>Presenter: Springle  |
| VIP Boardroom                 | <b>Accessibility and the power of sport (60 persons)</b><br>Presenter: Spencer   |
| 14:50 – 15:20<br>Pool Hallway | Coffee Break   |
| 15:20 – 16:10                 | <b>WORKSHOPS</b>   |
| CSIO Board                    | <b>Therapy modalities for Para sport Athletes (45 persons)</b>   |



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| Room                 | Presenter: Gibson   |
| Leadership Room      | <b>Paralympic sport ethics and integrity (80 persons)</b><br>Presenter: McNamee                     |
| CSIO S&C             | <b>Wheelchair ergometer (30 persons)</b><br>Presenter: Musalem                                      |
| Studio 1             | <b>NPCs as drivers for athlete education – Proud Paralympian (70 persons)</b><br>Presenter: Luchina |
| CSIO Kitchen         | <b>Adaptive Cooking (20 persons)</b><br>Presenter: Springle   |
|                      |   |
| <b>16:20 – 17:10</b> | <b>WORKSHOPS</b>  |
| CSIO Board Room      | <b>Therapy modalities for Para sport Athletes (45 persons)</b><br>Presenter: Gibson                 |
| Leadership Room      | <b>Paralympic sport ethics and integrity (80 persons)</b><br>Presenter: McNamee                     |
| CSIO S&C             | <b>Wheelchair Ergometer (30 persons)</b><br>Presenter: Musalem                                      |
| Studio 1             | <b>NPCs as drivers for athlete education – Proud Paralympian (70 persons)</b><br>Presenter: Luchina |
| CSIO Kitchen         | <b>Adaptive Cooking (20 persons)</b><br>Presenter: Springle   |
|                      |   |
| <b>17:10</b>         | <b>TRANSFER TO HOTEL / AIRPORT</b>  |
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## Keynote Speakers

### **Dr Cheri Blauwet**

21 September, 08:00 – 09:00

Seven-time Paralympic Medallist  
Instructor, Harvard Medical School, Harvard University

More Than Just a Game: The Public Health Impact of Sport  
and Physical Activity for Individuals with an Impairment



This lecture will emphasize the importance of engaging all people with an impairment, from the grassroots to up through elite, in sport as a means of promoting population health. According to the World Health Organisation, up to 15-20% of our global population are individuals with an impairment. Para sport should be seen as a tool not only for elite competitive opportunities, but also to enhance and enrich opportunities for all individuals with an impairment to lead healthy lifestyles. When we consider sport through the lens of universal design, it is easy to see how we can move the needle for global health promotion



## Dr Rory Cooper

22 September, 08:00 – 09:00

1988 Paralympic Bronze Medallist  
Founding Director, Human Engineering Research  
Laboratories  
McGowan Institute for Regenerative Medicine,  
University of Pittsburgh

Technology and the Paralympics: Current Capabilities  
and Future Possibilities



Technology plays a critical role in adaptive sports and recreation, and advances pose both opportunities and challenges. There are advances in manufacturing, robotics, and cybernetics that are making an impact at increasing rates. These changes will impact the Paralympic Movement, and it is best that people are informed and engaged. Over the course of the Paralympic Movement technology has contributed to advances in sports, recreation, and inclusion. Although, there is unequal access to technology, which could lead to further disparity based upon the wealth of the country and the individual. Technological advances, sports performance, social acceptance, and inclusion parallel one another. Within a generation, sports wheelchairs have been totally transformed and greatly customized for specific sports performance. In the late 1970's, athletes raced and competed in field events in nearly the same wheelchairs. Today, athletes use highly customized equipment for racing and field events that share almost nothing in common. Advances in technology affecting the Paralympics can be grouped into several large categories: Design; Materials; Manufacturing Techniques; Ergonomics; and Connectivity. Each of these domains will be discussed. Moreover, developments in other fields are likely to impact adaptive sports and the Paralympic Movement in the future causing the need to reconsider the events to be included and eligibility for participation.



**Dr Laura Misener**

23 September, 09:00 – 10:00

Associate Professor, School of Kinesiology,  
University of Western Ontario

The Paralympic Games and Social Impact:  
Beyond the Rhetoric



Research on the Paralympic Games has often privileged medical or exercise science inquiry (e.g. classification, sporting technology, performance, etc.). However, understanding how the movement and the Games impacts on broader social and cultural structures that influence participation opportunities, representations and hierarchies of impairment, and social integration has received less attention. Further, much of the conversation around Para sport focuses on the barriers to participation rather than considering how we can negotiate constraints in social and infrastructural context to improve opportunities, spaces, and places for participation. The International Paralympic Committee argues that all types of sport events can enhance the quality of life of people with access needs in the host community through greater levels of accessibility and participation in social and sporting life (IPC, 2013). Yet, evidence is scarce to support these ideas or other related areas of social impact. I draw upon my own work, which foregrounds a strengths based perspective of sport as a tool for social change, to engage in critical and difficult conversations about the role and value of the Paralympic Games in society. Using insights from ongoing research on event legacies of Para sport events, media representations of Paralympic athletes, and governance of Para sport, I will focus my discussion on the potential for broader social impacts of the Paralympic Games, wherein community and individual level strategies are aimed at increasing access for all.



## Invited Symposia Abstracts

### **Making Paralympic Champions? Socio-Economic Determinants of Paralympic Participation & Success.**

20 September, 14:00 – 15:30

David Howe, Reader in the Social Anthropology of Sport, School of Sport, Exercise and Health Sciences, Loughborough University, UK

Anjali J. Forber-Pratt, Assistant Professor Department of Human & Organisational Development, Vanderbilt University, USA

Sabine Radtke, Professor, Universität Paderborn, Department Sport und Gesundheit, Germany

The work of the IPC and the IPC Sports Science Committee is centred around five central themes, one of which is understanding the socio-economic determinants of Paralympic participation and success. In this panel presentation, three researchers, two of whom are Paralympians, will address this issue. They will do so by discussing theoretical, ethical and practical challenges and opportunities that impact the Paralympic movement's ability to increase the number of participants and the quality of their participation at the highest level of performance. Dr. Howe will begin the presentation by focusing on philosophical anthropology, offering semantic distinction and ethical questions related to the socio-economic determinants of Paralympic participation and success. This will set the stage for a presentation of current research by Dr.'s Forber-Pratt and Radtke. Dr. Forber-Pratt will present her qualitative research on perceptions of disability sport and Paralympic development challenges and strengths. She will also reflect on her recent fieldwork in 2017 conducted in Zambia as part of the Sport Envoys program in the United States providing clinics and training for athletes and coaches related to impairment and meeting with ministry officials to improve policy for persons with disabilities and access to sport. Dr. Radtke will then present on her research focusing on the necessary structural supports for Paralympic athletes. In her talk, she will address how inclusive the sports structures are in Canada, the United States and the United Kingdom and explore the resultant opportunities as well as challenges for officials, coaches and athletes.

The presentation will conclude with all three speakers reflecting on how the Paralympic movement can better assist the development of Paralympic participation and success from a global perspective.



## **Evidence-Based Classification**

21 September, 09:00 – 10:30

Florentina Hettinga, University of Essex, United Kingdom

Rianne Ravensbergen, Vrije Universiteit Amsterdam, The Netherlands

Raul Reina, University of Elche, Spain

In the early 2000s, the term 'evidence-based classification' highlighted the need to underpin the impairment – performance relationship scientifically by means of theoretical models and reliable and valid practical measurements. The VISTA 2006 conference, - entirely dedicated to classification in Paralympic sports -, confirmed this approach. In 2011, the British Journal of Sports Medicine published the position stand on classification in Paralympic sport, outlining the concept of the approach <sup>(1)</sup>. Since the latter publication, many sports attempted to measure the impact of impairment on sport-specific performance determinants. The current symposium presents examples of good practice, including athletes with physical, vision and intellectual impairment and its impact on motor proficiency, navigation and pacing, respectively.

<sup>(1)</sup>Tweedy SM, Vanlandewijck YC. International Paralympic Committee position stand-- background and scientific principles of classification in Paralympic sport. Br J Sports Med. 2011 Apr; 45(4):259-69.

## **Talent Identification and Development (TID) Program for Paralympic Sports**

21 September, 13:30 – 15:00

Joseph Baker, School of Kinesiology and Health Science, York University, Toronto, Ontario, Canada

Taisuke Kinugasa, Senior Manager, Athlete Pathway Development Project/ Sports Scientist, Japan Sports Council

Martin Lam, General Secretary, The Hong Kong Paralympic Committee & Sports Association for the Physically Disabled

Talent identification and development (TID) program are integral elements in elite athletes' pathway. Effective talent identification program is widely used in countries with



strong sport performance such as Australia, China, Germany and Japan. An effective TID program would direct children and youngsters who show potential sport talent onto the elite training system. This will expedite their future success in the major Games (e.g. Olympic and Paralympic Games). The key differences in TID programs between Olympic sports and Para sports are the approaches in recruitment and selection/ screening processes. It is a major challenge in many cities or countries to recruit or attract a mass number of children with different physical disabilities to join the TID programs. While in the screening process, classification of individual's impairment level (functional) in Paralympic sports is a distinct criteria in the selection of potential athletes which is not exist in Olympic sports. In this Seminar, two scientists will discuss the scientific elements on structuring the effective and appropriate TID program. Moreover, an experience administrator from Asia will introduce the practical application on operating the TID programs for the athletes with physical impairment.)

### **The Canadian Integrated Support Team Model**

22 September, 09:00 – 10:30

Bruce Craven, M.Sc., B.Sc.(PT), DIP.SPORT(PT), CSCS, Director of Training, Craven Sport Services

Jared Fletcher, Ph.D., Post-Doctoral Scholar, Faculty of Kinesiology, University of Calgary

Mike Frogley, MSc., High Performance Director, Wheelchair Basketball Canada

The purpose of the Integrated Support Team (IST) is to work together with the Coaching Staff and High Performance Director of each National Sport Organisation to develop the most effective multidisciplinary plan for optimal performance success through the utilization of Sport Sciences and Sports Medicine. The IST's mission is to enhance the coaches training, competition and recovery plans with appropriate scientific, medical and technical input which are suitable for that athlete, team and/or sport. The goal of the IST is to generate performance solutions capable of closing the technical/tactical/physical/psychological gaps identified by the Coach. This session will consist of sport science, sports medicine and Coaching experts describing their roles as IST members working with Canadian summer and winter Paralympic programs.

### **Maximizing Athletes' Performance – Facts and Concerns**

22 September, 15:30 – 17:00

Cindy Chang, Clinical Professor, Primary Care Sports Medicine, Departments of Orthopaedic Surgery and Family & Community Medicine, University of California, San Francisco. Co-Director, UCSF Benioff Children's Hospital Oakland, Sports Concussion Program



Hiroaki Hobara, Research Scientist, National Institute of Advanced Industrial Science and Technology · Human Informatics Research Institute. Japan · Kōtō-ku, Tōkyō

Michael McNamee, Professor of Applied Ethics, Swansea University, Wales GB

Athletic performance is influenced by a combination of physiological, psychological, and socio-cultural factors.

Coaches and athletes require effective training methods, best equipment, sophisticated sporting machinery, good nutrition, psychological consulting and more, to improve sports performance and to gain a competitive advantage.

For each individual, there is a limit to the capacity to perform exercise. The limitation depends on the nature of the task and is also influenced by a number of other factors. Endurance performance depends on cardiovascular capacity and the metabolic characteristics of the skeletal muscles. Muscle strength is determined mainly by muscle mass, but is also influenced by neural activity and biomechanical factors. In Paralympic athletes, other internal factors (such as health condition and impairment types), and external factors (such as equipment level and adjustments) play major role in achieving the highest level of performance.

However, maximizing athlete's performance comes with a price. Athletes are willing to take risks, break the law and push the boundaries in order to achieve the desired medal.

In this symposium, facts and concerns related to maximizing Paralympian athletes' performance will be addressed from physiological, biomechanical and philosophical perspectives.

## **Athlete – Coach Education**

23 September, 10:30 - 12:00

Marco Tulio Del Mello, Ph.D., Associate Professor, Federal University of Minas Gerais, Department of Sports, Minas Gerais, Brazil

Joelle Leonie Flueck, Ph.D., Swiss Paraplegic Centre, Institute of Sports Medicine, Nottwill, Switzerland

Stephen S. Cheung, Ph.D., Professor, Department of Kinesiology, Brock University, Canada, Canadian Research Chair in Environmental Ergonomics



Equipping coaches and athletes with the knowledge needed to train and recover wisely is pivotal to optimizing training adaptations and performance. This symposium will focus on three educational components; the role of sleep for training and in the recovery process, the use of ergogenic aids to maximize training adaptations, and adapting to training and competition in the heat. Dr. Marco Tulio De Mello will provide an overview of the interface between sleep and their functions in the process of physical and cognitive recovery, as well as to screen and monitor athlete sleep for developing interventions to improve sleep quality. Dr. Joelle Leonie Flueck will focus on discussing the evidence for ergogenic use in athletes with a spinal cord injury, namely caffeine, sodium citrate, vitamin D, and creatine. Additionally, supplement use will be discussed and recommendations for athletes and coaches will be provided. Lastly, Dr. Stephen Cheung, Canada's research chair in environmental ergonomics will present the physiological impact of exercise in the heat, the benefits to heat adaptation/acclimatization, and will survey the logistical and training modifications that may be required to optimize response. Dr. Cheung will also explore the use of pre-cooling measures to reduce heat strain prior to exercise.

## Workshops

### Bone Health in Paralympians

23 September, 13:00 – 13:50 and 14:00 – 14:50

Catharine Craven, MD, FRCPC, Senior Scientist Toronto Rehabilitation Institute, Associate Professor, Department of Medicine, Division of Psychiatry, University of Toronto

Dr. Craven leads the production of the Rick Hansen Institute (RHI)-sponsored E-scan atlas "Capturing Capacity in Canadian SCI Rehabilitation" and the "Spinal Cord Injury: a Manifesto for Change(link is external)". She has been the Scientific Co-chair of the 1-6th Canadian National Spinal Cord Injury (SCI) Conference. In recognition of her remarkable professional achievements, Dr. Craven was presented with the University of Toronto, Division of Physical Medicine and Rehabilitation Innovator of the Year Award in 2011 and the achievement award in 2014. Her workshop will discuss the role of dual energy x-ray absorptiometry (DXA) for assessing body composition (bone, lean and fat mass) among Para-athletes, will identify athletes with high endocrine metabolic risk for fracture and/or heart disease, and will highlight risk mitigation strategies.





### Adapted Strength and Conditioning for Wheelchair Sports

23 September, 13:00 – 13:50 and 14:00 – 14:50

Colby Hathaway MSc, CSCS, Canadian Sport Institute Ontario, Toronto Ontario

Colby has worked with Wheelchair Basketball Canada for 4 years in the daily training environment with the National Academy that started up in 2013 along with both senior national teams. He will share the knowledge he has gained over those years working with a diverse group of athletes. A few of the topics will include exercise selection for athletes with varying function, movement capabilities of different classifications, and program/workout design.

### Psychological Recovery Modalities

23 September, 13:00 – 13:50 and 14:00 – 14:50

Judy Goss, PhD, CC-AASP, Mental Performance Consultant

The workshop will discuss and demonstrate a variety of tools available to athletes to aid in the development their mental skills. Multidisciplinary research conducted on Para sport athletes utilizing the tools will be presented. Discussion surrounding the effectiveness of these tools for recovery and regeneration will also be presented.

### Career Transition - Game Plan

23 September, 13:00 – 13:50 and 14:00 – 14:50

Rolf Wagschal, PhD, Game Plan Advisor, Canadian Sport Institute Ontario, Toronto, Canada

As the Ontario based Game Plan Advisor, Dr. Rolf Wagschal has a unique perspective on athlete transition. This session will focus on the applied work that he has done with athletes in this area, including the various issues that practitioners (of all disciplines) should be aware of, and how to coordinate services in an integrated fashion.



### Therapy Modalities for Para sport Athletes

23 September, 15:20 – 16:10 and 16:20 – 17:10

Kylie Gibson, MScPT & Krista McCarty, ATC, RMT, Canadian Sport Institute Ontario, Toronto Ontario

Members of the Wheelchair Basketball Canada's National Training Academy will demonstrate how they have incorporated conditioning in the HydroWorx 2000 Pool as well as the Alter-G Anti Gravity Treadmill. Out of their chairs and onto their feet experiencing a fraction of their body weight allows them to move in ways they didn't think possible.

### Adapted Cooking

23 September, all afternoon (4 sessions)

Christine St. Clair, RD, Canadian Sport Institute Ontario, Toronto Ontario

For many Para athletes cooking can present challenges which include limitations in standing, reaching, or using one side of the body. This adapted cooking demonstration will explore some tips, strategies and adapted tools to build confidence and further develop skills in food preparation and cooking while providing a safe environment to optimize both health and performance. Specific sport nutrition strategies and considerations for Para athletes will also be integrated into practical tips and takeaways during this session. The session will take place in the Canadian Sport Institute Ontario's performance kitchen which has been uniquely designed to support Para athletes with lower countertops and induction cooktops.

### Wheelchair Ergometer

23 September, 15:20 – 16:10 and 16:20 – 17:10

Lindsay Musalem, MSc, Sport Biomechanist, Canadian Sport Institute Ontario, Toronto, Canada

Sport wheelchair installation affects propulsion efficiency and upper extremity loading. Despite Improvements in customization capabilities, wheelchair selection is currently based largely on subjective 'feel' rather than objective measures. This workshop will outline considerations and preliminary evaluation methods for wheelchair installation selection.



### Paralympic Sport Ethics and Integrity

23 September, 15:20 – 16:10 and 16:20 – 17:10

Michael McNamee, Professor of Applied Ethics, Swansea University, Wales GB

The world of sport is increasingly beset by ethical problems, from corruption and match fixing to child protection, doping and illegal betting. The integrity of sporting bodies and competitions at every level are being brought into question, creating an urgent need to develop a coherent, professional response to these issues.

The Erasmus Mundus Master in Sport Ethics and Integrity (MAiSI), a collaborative effort of six renowned European Universities, seeks to establish a new, internationally recognized profession within the field of sports administration and governance in both public and private sectors. A generation of postgraduate experts, selected from around the world, will enrol in the program between 2017 and 2021. After graduation, these experts will enrich sport agencies and organisations with their expertise in ethics and integrity and revolutionize the world of sport.

After introducing the MAiSI program, the audience will have the opportunity to participate in a critical discussion on those issue of Paralympic ethics and integrity that should for an agenda to be addressed in the program's curriculum development, ensuring the needs of the Paralympic world are properly met.

### NPCs as drivers for athlete education – Proud Paralympian

23 September, 15:20 – 16:10 and 16:20 – 17:10

Daniela Luchina, Athlete Representative IPC Sports Science Committee

As the development arm of the IPC, the Agitos Foundation aims to use Para sport to change lives and realise the IPC's vision of a more inclusive society for all. The name is taken from the Paralympic symbol, the Agitos, which means 'I move'. The Foundation attracts funding and delivers programmes to enable the development of Para sport opportunities around the world.

The Agitos Foundation has four priority themes (PARA):

- Pathways – Providing sustainable pathways into grassroots and competitive Para sport
- Awareness – Using the power of sport to help the world to understand impairment and embrace inclusion.
- Representation – Encouraging worldwide representation amongst competing athletes and greater diversity within our Movement.



- Ambassadors – Empowering athletes to maximise their talent, living the Paralympic values in a way that inspires the next generation.

One of the Agitos Foundation's key programmes is Proud Paralympian. It is aimed at Paralympians and Para athletes who aspire to compete in Paralympic Games. It is an umbrella programme that supports Para athletes from the early stages of their development, through to competition and into retirement. Its modules are designed to support their development as athletes, but also as individuals and active citizens. Its objective is to support athletes to achieve their best, find their place in the Paralympic Movement and learn how to become a leader for Para sport.

In this workshop participants will be introduced to Proud Paralympian and the positive impacts of athlete education through hands-on activities using one of the programme modules on dual career strategy. It will conclude with strategies for NPCs to activate the programme and identify new potential programme leaders.

#### Accessibility and the Power of Sport

23 September, 13:00 – 13:50 and 14:00 – 14:50

Alfred Spencer, Director, Outreach and Strategic Initiatives Branch, Accessibility Directorate of Ontario

As Ontario moves towards becoming an accessible province, participation in sport is important for people of all abilities. Alfred Spencer will focus on the power of sport to promote inclusion through examples from several Ontario communities, initiatives undertaken by Ontario non-profit organisations, and lessons learned from the 2015 Pan Am and Parapan Am Games.