- The report for **ISN SYMPOSIA** should contain:

1. **Basic information (the title of the Symposium and meeting, dates, organiser,**
   the venue, etc)

   The Symposium :New Frontiers in cognitive testing using touchscreen technology organized by Marco Prado, Tim Bussey, Lisa Saksida, Flavio Beraldo and Amy Reichelt was held from June 5th-6th at the University of Western Ontario Western Interdisciplinary Research Building (WIRB). There were about 100 attendees from around the world, including researchers from the USA, Canada, South America (Brazil), Asia (Korea, China) and Europe. In addition to the Symposium, thanks to support from BrainsCAN @ Western, we also organized a two day hands-on course for ISN travel award grantees (X people, % of females and geographical distribution). The symposium and course were heavily advertised and received fantastic social media coverage (#touchscreencogntion2019). Overall, based on comments from speakers and participants in social media (some of the highlights reproduced below) the meeting was a huge success and helped to establish a community of users of touchscreen technology in mouse models of neurochemistry deficits and disease. The speakers are listed below:

   - *Scientific Program*
   - Day 1:
   -
   - **Tim Bussey & Marco Prado - Opening remarks 9:15-9:30**
   -
   - Tim Bussey: Touchscreen overview 9:30-10:10
   -
   - Jackeline Crawley- Using touchscreens to evaluate animal models of neurodevelopmental and neurodegenerative disorders 10:10-11:00
   -
   - Coffee Break 11:00-11:15
   -
   - Flavio Beraldo (Young investigator)- Thinking inside the box =Using the touchscreens to evaluate cognition in FTD/ALS mouse models 11:15-11:30
   -

Emma Burrows- Dissecting clinically relevant attentional abnormalities in a mouse model of Autism Spectrum Disorder

- 11-30-12:20
-
- Lunch Break- 12:20-2:00 PM
-
- Mark Brandon- Hippocampal encoding during high-level cognition revealed using miniscopes 2:00-2:50
-
- Mark Baxter- Evaluation of cognition in rodents and non-human primates 2:50-3:40
-
- Coffee-Break 3:40-4:00
-
- Marco Prado - Data repository for touchscreen evaluation of cognition in rodents: MouseBytes
-
- 4:00-4:50
-

BK Kaang- Long-Term Memory and Synaptic Engram

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-
-
- Day 2:
-
- Andrew Holmes-Using touchscreen tests to decipher pre-frontal cortex and striatal contributions to high-level cognition 8:30-9:20
-
- Jess Nithianantharajah – Evaluation of cognitive complexity in mice and humans 9:20-10:20
-
- Miguel Skirzewski - Young Investigator)-Assessing nucleus accumbens dopamine dyamics during autoshape. Coupling touchscreens with fibre photometry 10:20-10:35
-
- Coffee Break 10:35-10:50
-
- Vania Prado-Cholinergic regulation of high-level cognition in mice 10:50-11:40
-
- Maksym Kopanitsa - Use of touchscreen cognitive testing to evaluate cognition in multiple sclerosis and Huntington disease mouse models 11:40-12:20
-
- Lisa Saksida-Translational touchscreen technology 12:20-13-10
-
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-

- Lunch and mingle with speakers: 13:10-14:30
-
- 15 min Datablitz by selected visiting ISN scholars and local young investigators on touchscreen technology 14:30-16:30
-

	Name	Affiliation	Title
1	Dan Palmer	Western - TCN	Medial Orbitofrontal Cortex Contributes to Decision Making in the Rodent Gambling Task
2	Keon Coleman	Western - RCC	Automated touchscreen tasks reveal early cognitive dysfunction in PD mouse models
3	Katrina Zmavc	Western - TCN	The role of adult hippocampal neurogenesis in depression-relevant reward-based behaviours
4	Lisa Bradley	Centre for applied genomics, SickKids	Preliminary studies of a novel ASD mouse model
5	Tyler Dexter	Western - TCN	Assessing the role of prefrontal circuitry in attention using the rodent continuous performance task
6	Oren Princz-Lebel	Western - TCN	Optimization of the Touchscreen-Based Visuomotor Conditional Learning Task for Fiber Photometric Recordings in Mice
7	Christina Perry	Florey Institute of Neuroscience	Chronic alcohol intake causes changes to attention, compulsivity and impulsivity measured in the 5 choice serial reaction time task
8	Annai Charlton	Florey Institute of Neuroscience	Alcohol-induced impairments in a reversal task are recovered following voluntary wheel running
9	Ornela Kljakic	Western - Prado lab	Investigating the role of striatal acetylchoine-glutamate co-transmission in cognition
10	Amy Reichelt	Western - TCN	Optimisation of a touchcreen spontaneous object recognition task for optogenetic manipulations

-
- Tim Bussey- Final words and summary 16:30-17:00

1. A short description of the highlights of the symposium

There were a number of highlights in the Symposium and practical course. The most important was the participation of students and post-doctoral fellows in the organization and running of our Symposium and course. Three volunteers are particularly noteworthy. Dr. Julie Dumont, a Research Associate with BrainsCAN @ Western organized the practical course attended by ISN scholars in a very dedicated and professional way. Dr. Flavio

Beraldo (Research associate BrainsCAN) and Dr. Amy Reichelt (Post-Doctoral fellow with Lisa Saksida) organized the Symposium. They provided support for the speakers and attendees and also chaired all the sessions during the Symposium. We are extremally grateful to these young scientists for their time commitment during the event.

Students provided feedback on the course which is attached to this report. The overwhelming response from ISN scholars was very positive. One of the most important highlights was our Datablitz, where young scientists presented a 5 min summary of their research. This was extremally well received by the attendees. All lectures were comprehensive and entertaining covering different aspects of neurochemistry, models of disease and the use of touchscreen technology. Most of the presentations were on data that have yet to be published. Moreover, there was an important bias to open science and open science initiatives by the presenters. The symposium also launched a web site we have developed to help the community share knowledge (touchscreencognition.ca) and a repository for datasets using touchscreens (MouseBytes.ca).
There was a fair balance of male and female presenters for the Symposium and overall a very positive interaction between ISN scholars and speakers. Young investigator invited speakers from Australia and UK presented a number of new insights in cognition testing in mouse models of disease.

2. **Number of attending people 78 people attended (112 registered)**

3. **Travel subsidies for the speakers of the ISN symposium**
    - **Expenses:**
    - **ISN scholars:**

ISN young scholars		Gender	Institution	Registration	Offer (Flight + per diem)	(registration + financial
Christina	Perry	Female	Florey Institute of Neuroscience and Mental Health	$400.00	$1,200.00	$1,600.00
Stephanie	Tullo	Female	McGill University	$400.00	$450.00	$850.00
Lisa	Bradley	Female	Sick Kids Hospital	$400.00	$0.00	$400.00
Annai	Charlton	Female	The Florey Institute of Neuroscience and Mental Health	$400.00	$1,200.00	$1,600.00
Jinxia	Wan	Female	China (Beijing)	$400.00	$1,100.00	$1,500.00
Kenneth	Dyson	Male	Douglas Hospital Research Centre	$400.00	$450.00	$850.00
Mohammad Hassan	Yaghoubi	Male	Douglas Mental Health University Institute	$400.00	$450.00	$850.00
Paul	Sheppard	Male	University of British Columbia	$400.00	$650.00	$1,050.00
Leonardo	Guarnieri	Male	University of Minas Gerais	$400.00	$1,400.00	$1,800.00
Emmanuel	Wilson	Male	Douglas Mental Health University Institute	$400.00	$450.00	$850.00

- **Total: CAN $ 11,350**

1. **Budget; detailed ISN budget, how the ISN funds were utilized**
2. **In Canadian Dollars:**
   - **Received from ISN: US$ 14,000 approximately CAN$ 18,306**
   - **To receive from ISN: US$ 3,500 approximately CAN$ 4,576**

   Total CAN$ 22,882

Expenses:

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Hotel, Partial cover of air flight and meals for speakers

Emma Burrows and Jess Nithianantharajah were invited as young scientists

Emma Burrows	$2,465.39
Jess Nithianantharajah	$2,885.20
Bong-Kiun Kaang	$2,510.26
Mark Brandon	$903.95
Andrew Holmes	$1,607.46

Maksym Kopanitsa	$1008.05

Total: $11,380.31

Total speakers CAN$ 22,730.31
Other costs: Name tags CAN$ 138.00
Total CAN$ 22,868.31
US$ 17,488

1. **Confirmation of the used of the provided ISN slides to inform the audience on ISN and on the benefits of an ISN membership.**

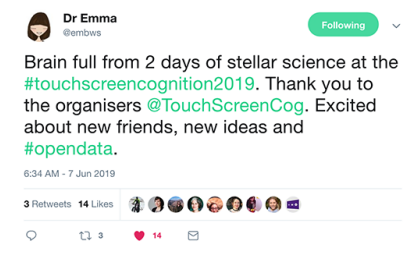
   Attached pictures show the presentation by Marco Prado of the ISN for the attendees

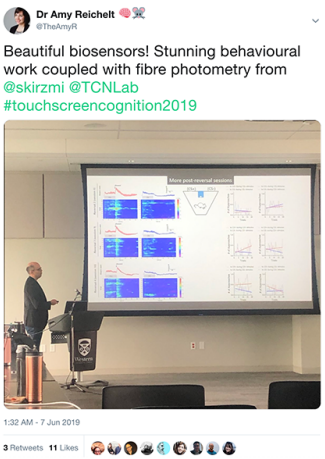
2. **Confirmation of the posting of information on the ISN supported event on the ISN Social Media channels before the event took place.**

Social Media advertisement before during and after the symposium was exceptional. The University of Western Ontario also published a release about the Symposium and course which can be found here https://brainscan.uwo.ca/news/2019/inaugural_touchscreen_symposium.html

Use the #touchscreencognition2019 to identify all tweets and some of the highlights are reproduced in this document and in the links provided.

3. **Confirmation of the posting of some concluding statements with pictures on the success of the ISN supported event on the ISN Social Media channels after the event took place.**
   Please see the twitter feed #touchscreencognition2019





4. **Photos**

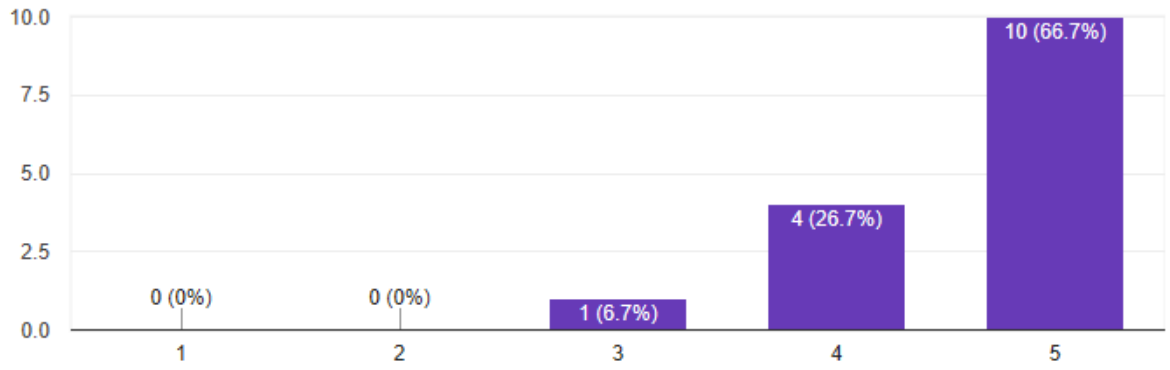
   See https://www.dropbox.com/sh/kb6962ad3u9iwnp/AACb0Smnq0tse6BDobqC2DQ9a?dl=0

5. Comments of at least three attendants about the Symposium

Spontaneous Comments in social media are reproduced above and the comments from ISN scholars are attached.
For the ISN Scholars we conducted a survey. Some of the key responses are reproduced below.

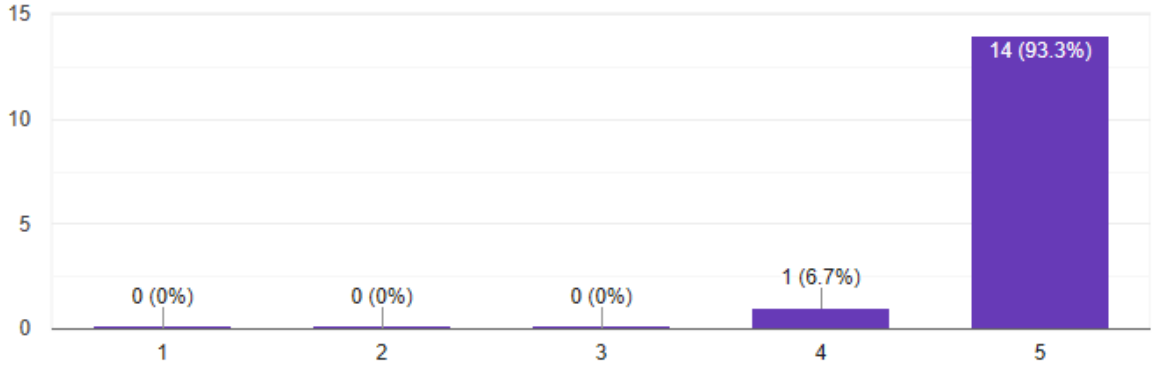
4) Overall, I enjoyed the course.

15 responses



9) I am likely to recommend this training course to other touchscreen users.

15 responses



10) Please describe something you learned in this course.

11 responses

I had the chance to get familiar with the system

How to extract data from ABET and upload data to MouseBytes

I am fairly new to touchscreens, so I have gained a large amount of knowledge regarding both how to run touchscreens and analysis. I was particularly interested in the touchscreens and in vivo capabilities as this will be an avenue that I will like to go down

Learning how to design schedules

I learned about the usefulness and implementation of the mousebytes data base.

Learned more about the front end data collection

Get the knowledge of the touchscreen behavior; How to use the ABET II system; Get familiar with the touchscreen facilities and touchscreen maintenance; How to use the MouseBytes ; How to get and analysis the data; How to design the touchscreen behavior

Dan's section involving the hardware and maintenance of the machines was extremely informative.

The comparison and updating of usual methods of behavior, through touchscreen techniques

Using very useful softwares. And also all presentations had very relevant things to learn.

11) What did you enjoy most about this training course?

12 responses

Involvement
The hands on learning of how to work AbetII (data extraction and designing a schedule) and how to use MouseBytes
The analytical session was very enjoyable.
As above, learning about data analysis, talking to people who are using touchscreens for different purposes
Interacting with other researchers who either had experience with the touchscreens or who had questions on how best to use the touchscreens. In general, the community building.
The community expansion, meeting ppl and learning from each other
Tour of Western touchscreen facilities and touchscreen maintenance
meeting and interacting with the touchscreen community
I enjoyed the enthusiasm and the various tours.
The possibility of observing in practice the touchscreen devices and the explanation of how to use ABETII to set up different protocols and manage the results.

12) What changes could be made to improve this course?

10 responses

So far so good

Perhaps even more opportunity to put theory into practice with an instructor available, although time is very short with 2 days so it just may not be possible! Would also have liked to delve a little more into data analysis, in particular R/Python, but again, time!

I have found the analytical aspect of touchscreens to be quite difficult and would have liked to have a more information on analytical programs such as Python to enhance my analytical skills.

honestly, can't think of a single thing!

Would be nice if the Instructions for the exercises for the mouse bytes were in chronological order of step execution, rather then jump around from page to page. Nothing serious though, way to go guys! :D

1. provide the information of the other participants, just like the GRC; 2. provide food and the accommodation; 3. arrange a tour for visiting of the Western University or some other famous places

The coding sections of the course were too fast and short for someone that is not experienced in the field. An entire day could be allocated for this aspect of the touchscreens.

Perhaps the course may have a slightly longer duration to cover other points more calmly.

I can't think of anything. Everything was pretty good

6. **The budget used for each speaker must be specified separately**
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