

Cultural Collisions Canada

- The **Ontario Ministry of Education**, invited **art@CMS**
 - to organize an interdisciplinary Science & Art exhibition/workshop/ lectures
 - Based on methodology organized already 2016/2017 at
 - CERN (February 2017)
 - Natural History Museum Vienna (June 2017)
 - Montenegro (October 2017)
- **ORIGIN**: an international scientific collaboration of experiments & institutes was formed to act as scientific support and advisory board
 - art@CMS, ATLAS, CLS-Canadian Light Source, CMS, LIGO/VIRGO, Muographer, Perimeter Institute,**
- activity: week-long **exhibition, workshops and lectures**
- venue: «**Ontario Science Centre** » Toronto



ORIGIN



Cultural Collisions

by ORIGIN - Canada



Content: **Science**: from Astrophysics to Particle Physics

Art: International art@CMS collaborative artists and local artists

- First exhibition April 9th – 15th 2018 -> **Research & Inspiration for students**
- Second exhibition: May 29th – June 3rd -> **students art-works presentation**
- Official research project of the Ontario Ministry of Education -> evaluation of educational impact / result foreseen after summer
- Origination structure:
 - **Toronto Ministry of Education**: general organization, education advisor, evaluation (Lisa Cole)
 - **art@CMS**: Exhibition curation, lectures and workshop planning (scientific & creative)
 - **ORIGIN**: Scientific curation

art@CMS, ATLAS, CLS-Canadian Light Source, CMS, LIGO/VIRGO, Muographer, Perimeter Institute

More institutions are interested to join: TRIUMF, Snowlab, ICEcube

Cultural Collisions by Origin-Canada



design by Michael Hoch@cern.ch

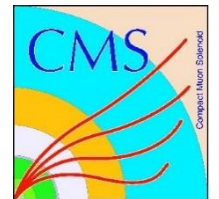
Invited by the **Ontario Ministry of Education**

and supported by **ORIGIN** - collaboration



Canadian
Light
Source

Centre canadien
de rayonnement
synchrotron



UNIVERSITY OF
TORONTO



Cultural Collisions @ Ontario Science Centre



- **Exhibition:** science posters, real hardware, real size photos, relevant artworks
 - **20 lectures:** 10 scientific & 10 creative
 - **32 workshops:** 16 scientific and 16 creative
- Participants : ~ 600 high school students

- **April 9th** lectures, science flash mob, science rap and sonification performance
- opening in the presence of officials from the Ministry and OSC CEO and board members

- **April 11th** Wednesday night talk “*Great Conversation Speakers Series*”
- Michael Hoch >> “Science engagement through the Arts”

<https://www.ontariosciencecentre.ca/Calendar/369/>

Video walk through the exhibition: <https://www.youtube.com/watch?v=4Hkrr1mCz7o>

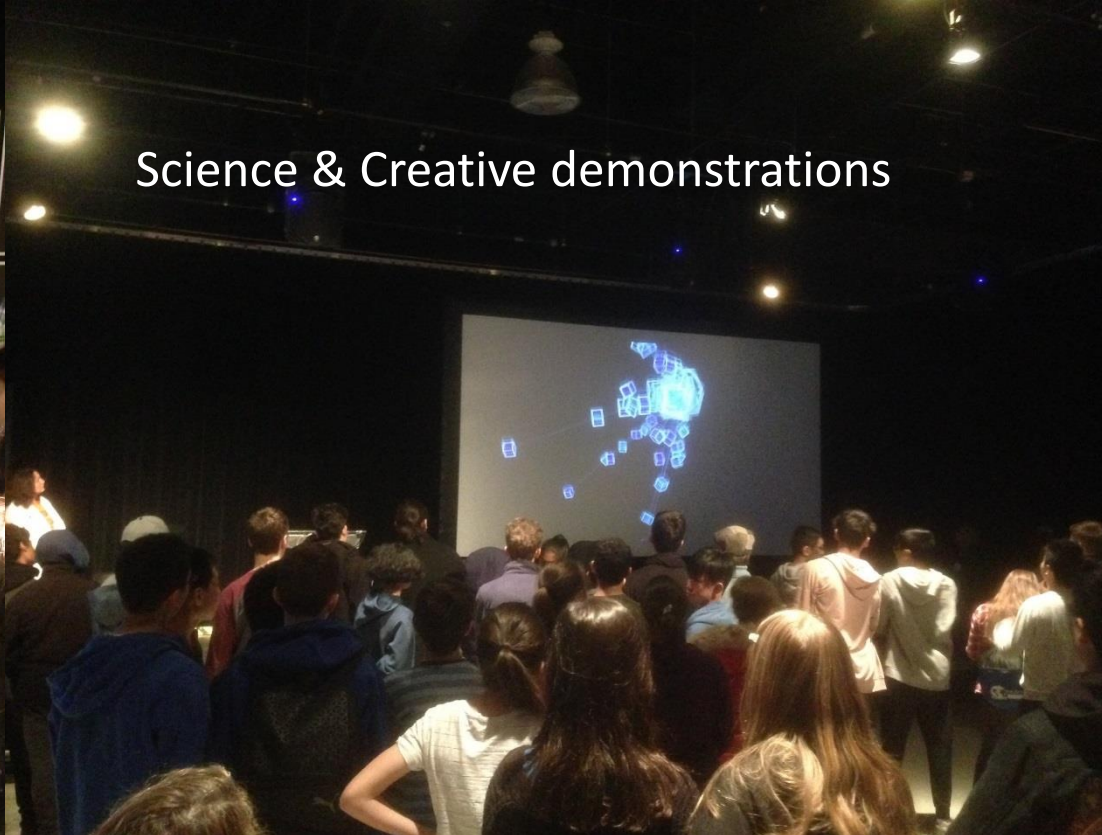
Press article: <https://research2reality.com/space-quantum/the-large-cultural-collider-of-physics-and-art/>

Cultural Collisions Canada – week schedule

Cultural Collisions Project with Origin - Maximum number of students per day (Tuesday - Friday) is 100 to accommodate workshops - Exhibit can always handle visitors																								
	Monday April 9, 2018				Tuesday April 10, 2018				Mercredi 11 avril 2018				Thursday April 12, 2018				Friday April 13, 2018				Saturday April 14, 2018		Sunday April 15, 2018	
	Schools: Danforth Collegiate, Ecole secondaire Toronto Ouest, University of Toronto Schools				Danforth Collegiate (60 grade 9 and 11 Students) and University of Toronto Schools (6 Grade 11 students) + OSC invitations				Ecole secondaire Toronto Ouest (61 étudiants - 10e et 11e année) - École francophone				University of Toronto Schools (95 students - Grade 8, 10) - Shifted schedule 30 minutes later - Start time is 9:30 am this day only!				Open for Ontario Science Centre Invitations to Participate - York Region Schools				Open to the public - Open at 10 am		Open to the public - Open at 10 am	
9:00 AM					20 Minute Talk: Karola Dette, University of Toronto - From Particle Physics to Astrophysics				Mini-présentation: Karola Dette, Université de Toronto - De la physique des particules à l'astrophysique				20 Minute Talk: Karola Dette, University of Toronto - From Particle Physics to Astrophysics				20 Minute Talk: Karola Dette, University of Toronto - From Particle Physics to Astrophysics							
9:30 AM	Opening Event (9:30 - 10:00) - Richard Franz, Maurice (OSC), Rock Paper Science Hall (RPS)				Workshop 1A	Workshop 1B	Workshop 1C	Workshop 1D	Atelier 1A	Atelier 1B	Atelier 1C	Atelier 1D	Workshop 1A	Workshop 1B	Workshop 1C	Workshop 1D	Workshop 1A	Workshop 1B	Workshop 1C	Workshop 1D	Exhibit area activities will be available for the public		Exhibit area activities will be available for the public	
9:45 AM					9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	9:30 - 10:30 am	People to be within the exhibit area to support the programming
10:00 AM	Science Flash Mob (10:00 - 10:45)				Perimeter Institute	CMS - CERN, University of Notre Dame	ATLAS, CMS, CERN	York University	Institut Périmètre	CMS - CERN, University of Notre Dame	ATLAS, CMS, CERN	York University	Perimeter Institute	CMS - CERN, University of Notre Dame	ATLAS, CMS, CERN	York University	Perimeter Institute	CMS - CERN, University of Notre Dame	CMS - CERN	York University	Open till 8:00 pm		Open till 6:00 pm	
10:15 AM					Kelly Foyle and Kevin Donkers	Tom McCauley	Michael Hoch	Robin Kingsburgh	Dave Vrolyk et Nathan Chow	Tom McCauley	Michael Hoch	Robin Kingsburgh	Dave Fish and Damian Pope	Tom McCauley	Michael Hoch	Robin Kingsburgh	Olga Michalopoulos	Tom McCauley	Michael Hoch	Robin Kingsburgh	Pop up Public Talks		Pop up Public Talks	
10:30 AM					10:45 am - Talk in Exhibit Area - By Perimeter Institute - Dr. Kelly Foyle, Black holes and the Event Horizon Telescope	10:45 am - Brigitte Tessier, Artiste collaboratrice de la France & Montréal - "QUI DES DEUX INSPIRE L'AUTRE: Le SCIENTIFIQUE ou L'ARTISTE?"				10:45 am - Talk in Exhibit Area - By Perimeter Institute - Dr. Damian Pope - Hidden Patterns in Physics				10:45 am - Talk in Exhibit Area - Peter Krieger				11 am - 20 Minute Talk: Peter Krieger, University of Toronto - ATLAS / LHC						
10:45 AM					Exhibit Area with Scientists and Artists				Aire d'exposition avec les scientifiques et les artistes				Exhibit Area with Scientists and Artists				12:00 pm - 20 minute talk: David Griffin (OCAD University)							
11:00 AM					Moderated Panel: Meet the Scientists and Artists! (10:45 - 11:15)								Exhibit Area with Scientists and Artists				1:00 pm - 20 Minute talk: Robin Kingsburgh							
Lunch	11:15 am - 12:00 pm				11:30 am - 12:15 pm				11:30 am - 12:15 pm				11:30 am - 12:15 pm				11:30 am - 12:15 pm				3 pm - 20 minute Talk: Consensus Science Rap			
12:00 PM	Performance of Consensus, interactive component, Scott Wilson with the audience and then Q & A				12:15 pm - Talk in Exhibit Area - Michael Hoch or Robin				12:15 pm - Talk in Exhibit Area - Peter Krieger				12:15 pm - Talk in Exhibit Area - Peter Krieger				12:15 pm - Talk in Exhibit Area - consensus				Volunteers Coming:		Volunteers Coming:	
12:15 PM					Workshop 2A	Workshop 2B	Workshop 2C	Workshop 2D	Atelier 2A	Atelier 2B	Atelier 2C	Atelier 2D	Workshop 2A	Workshop 2B	Workshop 2C	Workshop 2C	Workshop 2A	Workshop 2B	Workshop 2C	Workshop 2C	Peter Krieger (ATLAS Canada, Professor, U of T)	Peter Krieger (ATLAS Canada, Professor, U of T)	Michael Hoch CMS	Michael Hoch CMS
12:30 PM					Listening to Einstein's Universe (EN/FR)	Playing with Data (EN)	Accelerating Colours (EN/FR)	Science through Rap	Écouter l'univers d'Einstein (EN/FR)	Des données créatives au son (EN/FR Maybe)	Accélérer les couleurs (EN/FR)	La science à travers le rap	Listening to Einstein's Universe (EN/FR)	Creative Data to Sound (EN)	Accelerating Colours (EN/FR)	Science through Rap	Listening to Einstein's Universe (EN/FR)	Creative Data to Sound (EN)	Accelerating Colours (EN/FR)	Science through Rap	Wen Yi Song (ATLAS Canada, York University)	Bianca Ciungu (ATLAS Canada Toronto MS)		
12:45 PM					LIGO, University of Glasgow	CMS - CERN, University of Notre Dame	CMS - CERN, Collaborative Artist from Montreal working in France	Consensus	LIGO, University of Glasgow	BEER, University of Birmingham	CMS - CERN, Collaborative Artist from Montreal working in France	Consensus	LIGO, University of Glasgow	CMS - CERN, University of Notre Dame	CMS - CERN, Collaborative Artist from Montreal working in France	Consensus	LIGO, University of Glasgow	BEER, University of Birmingham	CMS - CERN, Collaborative Artist from Montreal working in France	Consensus	Lisa Cole	Lisa Cole		
1:00 PM	Workshops and Activities in Exhibit Area				Martin Hendry	Tom McCauley	Michael Hoch and Brigitte Tessier	Antoine Gittens-Jackson	Martin Hendry	Scott Wilson	Michael Hoch	Antoine Gittens-Jackson	Carl-Johan Haster	Tom McCauley	Michael Hoch	Antoine Gittens-Jackson	Heather Fong	Scott Wilson	Michael Hoch	Antoine Gittens-Jackson	Consensus	Vincent Pascuzzi (ATLAS Canada Toronto F)		
1:15 PM	Activities in the exhibit area																							
1:30 PM	Prompts?																							
1:45 PM	Interaction with staff, scientists in the staff				Room: RPS Hall	Dry Lab	20 students	20 students	RPS Hall	Workshop 4	Aire d'exposition	20 étudiants	20 étudiants	Room RPS Hall	Workshop 4	Exhibit Area	20 students	20 students	20 students	20 students	Bianca Ciungu (ATLAS Canada MSc Student, Toronto)			
2:00 PM	Artists present in exhibit area				Activities in Exhibit Area with Q & A				Activités dans l'aire d'exposition (questions et réponses)				Activities in Exhibit Area with Q & A				Activities in Exhibit Area with Q & A							
2:15 PM																								
2:30 PM	Departure at 2:30 pm				Departure at 2:30 pm				Départ à 2:30 pm				Departure at 2:30 pm				Departure at 2:30 pm							
					Open till 6:00 pm				Ouvert jusqu'à 6:00 pm				Open till 6:00 pm				Open till 6:00 pm							
									Evening Talk - 7:00 pm															



Science personal dialogue



Science & Creative demonstrations



Creative workshops



Specialized topic talks



General science talks

Young audience



Cloud Chamber Workshop



Life Size Photo Wall



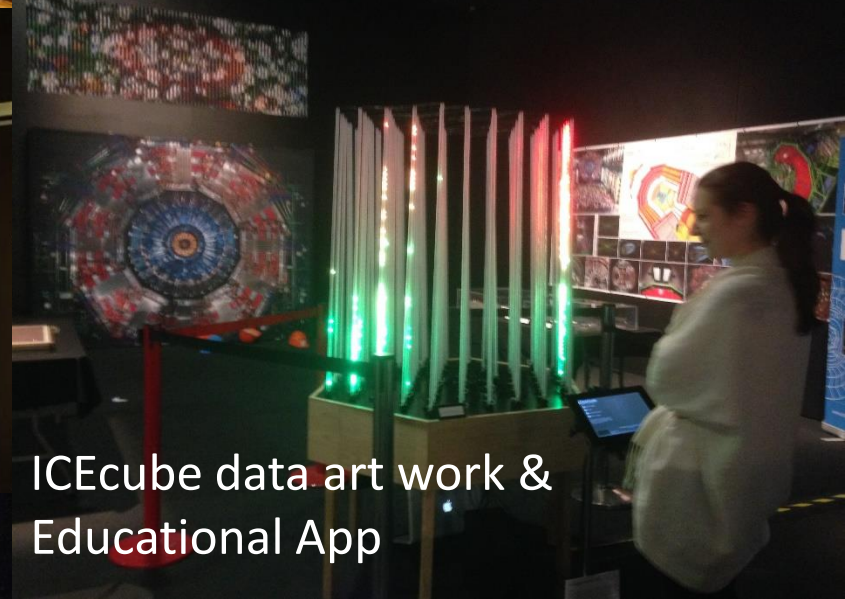
Rap Workshop



Creative Photo Wall



ICEcube data art work & Educational App



General Science Morning Introduction Talk



Exhibition & Great Conversation Evening

“Science engagement through the Arts”



LHC tunnel Photo wall



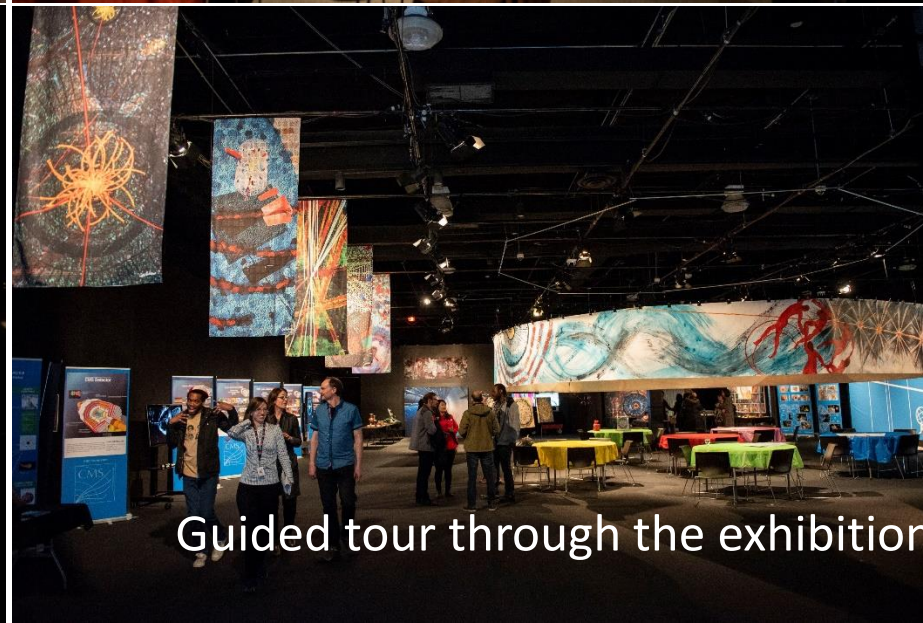
Science Centre CEO Maurice Bitrain



Direct dialogue



M. Hoch presentation



Guided tour through the exhibition



Entrance CMS life size photo

Concert at the Royal Music Conservatory

Scott Wilson (BEER) world premier "Dark Matter"



Data Sonification Workshop



World Premier "Dark Matter"



Pre Concert Conversation



Pre Concert Conversation



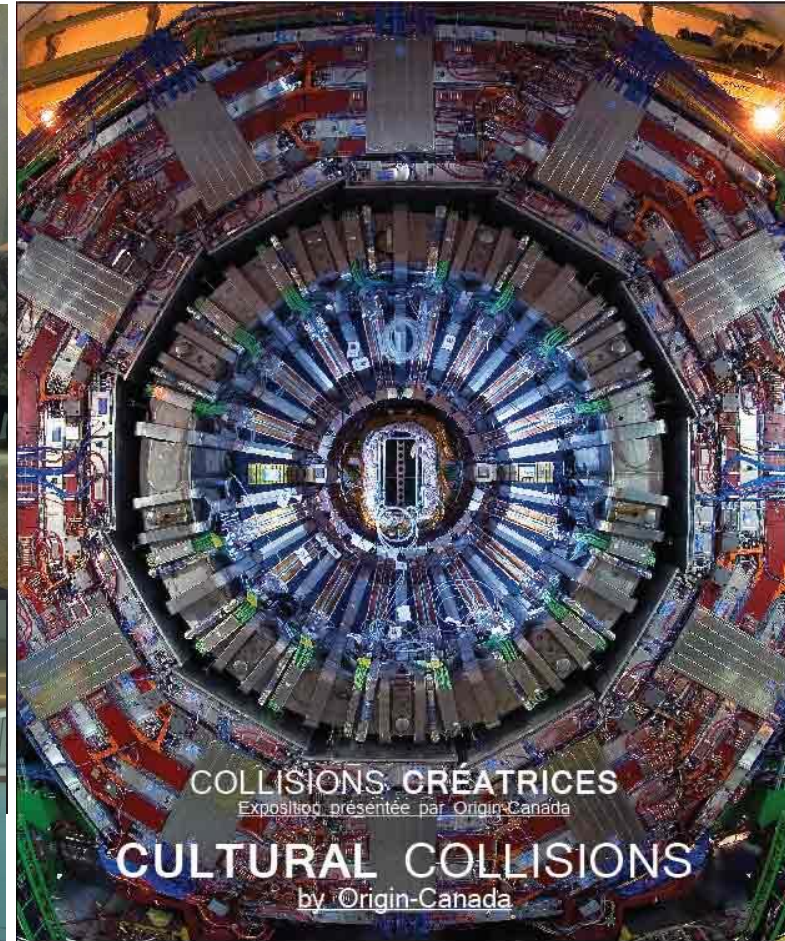
OSC data sonification
Life demonstration

Cultural Collisions - science engagement methodology

© Michael Hoch

- Participating science teacher receive science support material
- Organization of a Virtual Visit with participating experiments
- Curate in collaboration with public venue - “RESEACH & INSPIRANTION” experience
- Use the framework of the exhibition to organize a series of
 - LECTURES on science and art topics
 - WORKSHOPS – science workshops as well as creative workshops
 - Further activity for students and general public:
 - special topic talks
 - round table discussion with scientists and specialists of other fields in the arts, education or completely different
 - documentary film presentations (e.g. “The Beauty of Science”, “ATLAS
- Send the school groups back with the challenge to do on their own further scientific research and create science related artworks under the supervision of the science teacher & the art teacher
- Organize a second exhibition in a prominent venue where the results of the student artworks are presented
 - Possibility : selection of the best artworks, competition and award for the best artworks ?

Second Exhibition - Student Results - artWorks



STUDENT ART ŒUVRES ÉTUDIANTES
INSPIRED BY SCIENCE INSPIRÉES PAR LA SCIENCE

From May 29 to June 1, 2018 Du 29 mai au 1^{er} juin 2018

Danforth Collegiate and Technical Institute
École secondaire Toronto Ouest
University of Toronto School



Student Exhibition Opening – Rap & Dance Performances



Rap performance & HipHop

Cultural Collisions / Collisions Creatrice

Student ART inspired by Science

Date : May 29th till June 1st
Venue : Ontario Science Centre / Toronto
Participating Test schools : Danforth Collegiate and Technical Institute
Ecole Secondaire Toronto Quest
University of Toronto School

Diversity of artistic expression :

Science Rap (lyrics & beat& performance), HipHop dance, painting, drawing, digital painting, video animation, mixed media sculpture, ...

Format fosters science engagement and triggers students to do more research on their own.

-> process **followed by the Ministry of Education**

-> **evaluation result** expected: end summer 2018

Further parts of the program

1) Collaboraiton with artUniversities

Applied Arts Vienna, Central Saint Martins , Chelsea College of Art London, ESA Lille, KASK Ghent, artUniversity,

In preparation : Brera Milano, Orpheus Ghent, LUCA Brussel, HEAR Strassbourg

2) Science&Art@School program successfully implemented :

Italy (INFN/ CERN), Austria, India, US, UK and others

To make it sustainable support needed

In every interdisciplinary activity **CERN** is the main topic (not the experiments)
with each **art@CMS** or **ORIGIN** event organised in
MEMBER & NON MEMBER STATE CERN gets
huge **awareness** and **visibility** of **general public** and **educational institutions**.

To make this program **sustainable** and developed it further
By following CERNs vision of **collaboration & networking**
for particle physics and big science
CERN involvement and financial topping is needed.

contact:

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<http://mhoch.web.cern.ch/mhoch/Art@CMS/Art@CMSprojects.pdf>