Art & Science networking and engagement from art@CMS to ORIGIN

Michael.Hoch@cern.ch
September 18/09/2018 Split / Croatia
Supported by

CMS
and partners

ATLAS, ALICE, CMS, LIGO, ICEcube,
Muographer, Perimeter Institute,
Canadian Light Source,
and partners

More institutions and experiments under discussion
Engagement & Networking

Help our science community to reach out to the general public and especially young people by connecting the arts with the beauty of particle physics, physics and science in general to better understand the world we all experience.
Exhibitions

The outcome of collaboration between artists, art institutes, scientists and our collaborating science institutes and act as catalysts for promoting public interest and understanding of science as well as artistic expressions.

no limits of arts, photo, painting sculpture, music, dance, ....

science & art workshops – for graduate and undergraduate students

Interdisciplinary in their nature, SciArt workshops enable young people to gain a better understanding of science, to be inspired and encouraged, and to develop skills that are critical to the challenges of the 21st century.

science learning (masterclass) followed by creative art production - sciARTmasterclass
Jan 5th – 21st - Etoile Fico Museum, Turin / Italy
Feb 28th – Apr 10th - Cite du Temps, Geneva / Switzerland
Mar 24th – Oct 30th JINR Library Dubna / Russia
Apr 4th – 10th Athens Science Festival
Apr 14th – 21st Triangle Space Chelsea Coll. Arts, London / UK
Apr 27th – Jul 31st CERN, Prevezzin Site, Blvd. 774 – Prevezzin / France
May 1st – 6th Arte & Scienza – Castello Giusto, Vico Equense / Italy
May 6th Physics Conclave, New Delhi / India
Jun 22nd – Aug 5th art@CMS vernissage & exhibition, CERN, CMS site, Cessy / France
Jul 3rd – 6th SUSY conf. – Melbourne / Australia
Aug 22nd – 30th Global Hands on Universe, HSIN, Stord / Norway
Sept 2nd – Oct 3rd IMPACT, SBCAST, Santa Barbara / US
Sept 12th – Oct 3rd, IMAGE2016, Ferrary Gallery, Vevey / Switzerland
Sept 19th – 24th, LHClays Split, Palazzo Milesi, Split / Croatia
Oct 3rd – 9th, SCCTWG – TeacherHouse & University Tbilisi / Georgia
Oct 14th – Aug 2017 Natural History Museum Vienna / Austria
Oct 25th – Nov 2nd, IEEE, Palais de Congres, Strasbourg / France
Oct 24th 2016 – Jun 2017 Landesmuseum fuer Vorgeschichte, Halle (Saale) / Germany
Nov 10 Nehru Planetarium- Cosmic Soup- INDIAN tour Mumbai / India
Dec 10th Sambhavana Sci. Festival- INDIAN tour Gurgaon / India
Dec 10th – 11th TeacherDays Conference - TeacherHouse Tbilisi / Georgi,

24th February Cultural Collisions, CERN Meyrin, Geneva / Switzerland
16th March IndianTour / India
April 6th MACT HUB Santa Barbara / US
10th – 24th April ItalianTour / Leonardo da Vinci Museum Milano / Italy
3rd – 10th May RE: Logica – Art/Science / Technology Conference Sofia / Bulgaria
9th – 13th June NHM school competition show, Vienna / Austria
14th -17th June Four Corners Gallery – Central Saint Martins College of Arts London / UK
17th – 30th June Weisse Haus University Applied Arts final show / Vienna / Austria
21st – 30th June art@CMS vernissage CERN PS, Cessy / France
1st July Mairie de Thoiry, Thoiry / France
22nd – 30th July Palacio del Cinema, ItalianTour/ EPS2017 Venice / Italy
1st – 9th August IndianTour / India
29th Sept – 3rd Oct MuoGrapher art Workshop, Tokyo / Japan
9th – 11th October Science Festival, Podgorica / Montenegro
14th – 28th October ItalianTour / Padua / Italy
23rd – 28th October Science Festival OMAN
26th October art@Science Workshop Tbilisi/Georgia
6th Nov 2017 – Jan 2018 UAI final show / London / UK
November IndianTour / India
December BOZAR Brussels / Belgium
artUNIVERSITY Podgorica Montenegro

Dates and venues under discussion:

2018 start ORIGIN
Ontario/ Canada, Tokyo/ Japan, FERMILAB/ Chicago, NY/ US, Croatia, Montenegro,
Bosnia, Georgia, UK, Corea, ...

Art@CMS Exhibitions 2015:
Jan 22nd – Mar 3rd - WELIOS- Galerie Wimmer, Wels / Austria
Feb 27th – Apr 23rd Wilson Hall, FERMILAB / USA
Mar 17th – 22nd, Athens Science Festival, Technopalis Museum, Athens / Greece
May 2nd – 31st Art Center South Florida, Miami Beach / US
May 14th – 17th TIF–Helexpo, Tessaloniki’s Science Festival / Tessaloniki/ Greece
Jun 24th – Jul 17th – art@CMS vernissage, CERN, CMS site, Cessy / France
Jun 26th – Jul 14th KIT – Karlsruhe / Germany
Jul 19th – 31st EPS2015 conference Vienna / Austria
Aug 31st – Sep 5th LHCP2015 - St. Petersburg / Russia
Sept 15th – 20th Castel dell Ovo, Naples / Italy
Sept 19th – Oct 1st, l’Origine, C. Cultures Jean Monet, St. Genis / France
Dec 2nd – 5th, Mediterranean Science Festival / Cyprus

Art@CMS Exhibitions 2014:
Feb 20th – Apr 8th Colegium Hungaricum, Vienna / Austria
Mar 21st – Apr 4th WienerWunderRammer, Vienna / Austria
Apr 4th Science Night Vienna CERN 60th Celebration Vienna / Austria
Jun 6th QualysMART Science – Technology – Art, Vienna / Austria
Jun 25th Art@CMS vernissage at CERN PS, Cessy / France
Jul 2nd – 9th, IChE2014 Conference Science & Art – Congress Palace, Valencia / Spain
Jul 10th – 30th, S. Francis College, New York / USA
Sep 29th – Oct 5th EPI, Split / Croatia
Oct 13th – 30th, CERN 60th Earth&M Museum, Sofia / Bulgaria
Nov 15th – 21st, Earth&M Museum, Sofia / Bulgaria
Nov 28th – 31st December, Shoreditch / London / UK
Dec 16th – Jan 8th 2015 Academy Palace, Brussels / Belgium

Art@CMS Exhibitions 2013:
Feb 13th – 15th, VCI Conference, Palais Ferstel, Vienna / Austria
Apr 4th –Jul 10th, Art@CMS opening & exhibition, CERN PS, Cessy / France
Jun 12th – 14th, CMSstart Workshop, Joanneum Museum, Graz / Austria
Sept 23rd – 30th, ‘Quantum’, CERN PS, Cessy / France
Sep 27th – 30th, Art@CMS show, CERN OpenDay, CERN PS, Cessy / France
Nov 11th – Dec 3rd, ‘Art of Science- Beauty in Creation’, RWTH, Aachen / Germany
Nov 28th, US Higgs Discovery Event, Washington / USA
Dec 12th – March 30th 2014 ‘To See a World’, Art@CMS exhibition, CERN PS, Cessy / France

Art@CMS Exhibitions 2012:
Jul 1st – 31st, Science Coffee, Aula der Wissenschaften, Vienna / Austria
Dec 10th – 21st, ‘Art of Science- Beauty in Creation’, CERN Meyrin, Geneva / Switzerland
Artists and CMS physicists “The Collaborative Artist scheme”:

**Artist: Xavier Cortada**
- Art form: Digital art
- Email: xavier@cortada.com
- Web page: http://www.xaviercortada.com/

**Artist: Michael Hoch**
- Art form: Photographic collage
- Email: michael.hoch@cern.ch
- Web page: http://www.advventureart.org/

**Artist: Alison Gill**
- Art form: Sculpture
- Email: AlisonGill@cern.ch
- Web page: http://www.alissongill.com/

**Artist: Paco Falco**
- Art form: Painting
- Email: paco.sacor@alice.it
- Web page: http://www.pacofalco.com/

**Artist: Chris Henschke**
- Art form: Digital video art
- Email: Chris.Henschke@synchrotron.org.au

**Artist: Lindsay Olson**
- Art form: Textile art
- Email: lindsay816@zbcglobal.net
- Web page: http://www.lindsayolsonart.com/

**Artist: Cvetana Ivanova**
- Art form: Art installations
- Email: re.cvetana@gmail.com
- Web page: http://www.emotionalanatomy.co.uk/

**Artist: Alemka Divoje**
- Art form: Performance
- Email: alemka.divoje@gmail.com
- Web page: http://divoje.com/

**Artist: Brigitte Tessier**
- Art form: Painter
- Email: brigitte.tessier@laposte.net
- Web page: https://brigittetessier.wordpress.com/

**Artist: Yuki**
- Art form: Sculpture
- Email: shiraishiyuki@hotmail.com
- Web page: http://cargocollective.com/yukishiraishi

**Artist: Andy Charalambous**
- Art form: Sculpture
- Email: ucapsach@live.ucl.ac.uk
- Web page: www.andycharalambous.com

**Artist: Peter Bellamy**
- Art form: Video art
- Email: pbellamy16@outlook.com
- Web page: https://vimeo.com/114362090

**Artist: Rosa Nussbaum**
- Art form: Video art
- Email: rosa@rosanussbaum.com
- Web page: http://rosanussbaum.com/

**Artist: PEER - Konstantinos Vasilakos**
- Art form: Music
- Email: konstantinos.vasilakos@gmail.com
- Web page: https://www.konstantinosv.com/

**Artist: Domenico Vicinanza**
- Art form: Music
- Email: domenico.vicinanza@anglia.ac.uk
- Web page: www.domenico.com
Exhibitions
National History Museum NHM Vienna

October 18th 2016 – August 20th 2017 Cooperation NHM – HEPHY

visitors 500,000!

“Dateline zero for space and time”, Brigitte Kowanz AUT 2016

“SUSY’s Fingerprint”, Hofstetter Kurt AUT 2016

“Nebulae in the cosmos”, Barbara Imhof, Eva Schlegel AUT 2016


“Nature of the Apparatus”, Chris Henschke AUS 2015

“Galaxies”, Manfred Wakolbinger, AUT 2012-2016
Collaboration with artists

art@CMS collaborative artist
Workshops

Science&Art@School ECOLINT: [https://www.youtube.com/watch?v=yTqDm0Yp04E](https://www.youtube.com/watch?v=yTqDm0Yp04E)
Science&Art@School – Cultural Collisions

Photos: CERN Bldg 40 became a stage for students

art@CMS INFN Italian Tour has similar activities and creates synergies between various action to inspire students
Science&Art@School – Cultural Collisions

science&art@school event 2017 in Vienna (June) and the Cultural Collisions event at CERN (February):
This is a Horizon 2020 EU project CREATIONS http://portal.opendiscoveryspace.eu/creations

*Photos of the event in the Natural History Museum Vienna June 2017:* [https://goo.gl/photos/esmfuMAx8Xr5K3V66](https://goo.gl/photos/esmfuMAx8Xr5K3V66)

Videos of the science&art@school event in the NHM:
- Rhythm of Science: [https://youtu.be/DjkH7f1PNpI](https://youtu.be/DjkH7f1PNpI)
- Cultural Collisions – dance: [https://youtu.be/Bly_iERk5Ps](https://youtu.be/Bly_iERk5Ps)

*Cultural Collisions @ CERN February 2017*

Photos: [https://goo.gl/photos/2tpnAg7TnsWEjq9q6](https://goo.gl/photos/2tpnAg7TnsWEjq9q6) [https://1drv.ms/f/s!AI-rN-I0kS2sg_glpGmn7xOEnwjlfQ](https://1drv.ms/f/s!AI-rN-I0kS2sg_glpGmn7xOEnwjlfQ)

Video of a student of the workshop @ CERN: [https://www.youtube.com/watch?v=TEsgtwUv6xk](https://www.youtube.com/watch?v=TEsgtwUv6xk)

CCC Cultural Collisions CERN – a dance performance by students @ CERN: [https://youtu.be/ETjKwUS0yfg](https://youtu.be/ETjKwUS0yfg)
Students participating in the CMS Junior Scientist Program art@CMS interdisciplinary Exhibition with: real detector & accelerator equipment, art works, creative corners, lectures and detector workshops as well as sciART workshops.

Montenegro 2017: https://www.youtube.com/watch?v=9vf1W-Pf7vg
Athens 2015: https://www.youtube.com/watch?v=tT8MHsCaYks
University of the Arts London - Saint Martins College of Art

local scientific partner: Imperial College

2 semester sciART course October 2016 – June 2017

- 22 students supervised

Responsible: Prof. Nathan Cohen, Prof. Heather Barnett, Dr. Andrew Charalambous

- Weekly lectures at the UAL/CSM
  - Lectures from colleagues of Imperial College
  - Visit at CERN 5 days December 5 days May
  - Offered workshops at CERN during May visit
  - Final show in London June and November

Photos: https://goo.gl/photos/VfSSqkg7cN7Ejzs97
University of the Arts London - Saint Martins College of Art
local scientific partner: Imperial College
Vernissage / Exhibitions: June (Labyrinth)  November (CSM) 2017
University of the Arts London - Saint Martins College of Art
local scientific partner: Imperial College
Applied Arts University Vienna
local scientific partner: HEPHY
2 semester sciART course October 2016 – June 2017

• 2 classes each 11 students + 11 staff
  responsible: Prof. Virgil Vidrich, Prof Paul Petritsch
• Weekly lectures at the Applied Arts Universisty
  • Visit & Lectures from colleagues of HEPHY & TU
  • Visit at CERN 5 days December
  • Artwork rehearsal March
  • Particle detector construction workshop March
  • Final show in Vienna June

Photos: https://goo.gl/photos/i6MqYfwCRgnNVs4N9
Applied Arts University Vienna
local scientific partner: HEPHY
Vernissage / Exhibition June 2017
Chelsea College of Arts London
1 semester sciART course  October 2014-2015-2016

• supervision  Prof. Dave Webster
• Weekly lectures and discussions at UAL

2014/ 2015 Visit at CERN with 4 students + 4 trainees Shoreditch Trust
2015/2016 - Visit at CERN 5 days, Final show  TriangleSpace London June
Science: from Astrophysics to Particle Physics

- First exhibition April 9th – 15th 2018 Venue: Ontario Science Centre, OSC Research & Inspiration for students
- Second exhibition: May 29th – June 3rd at OSC: students art-works presentation
- A formal evaluation by the Ministry of Education will follow in June.

Art: International art@CMS collaborative artists and local artists

Organization:
Toronto Ministry of Education: general organization, education advisor, evaluation
art@CMS: Exhibition curation ORIGIN: Scientific curation
art@CMS, ATLAS, CLS-Can.Light Source, CMS, LIGO/VIRGO, Muographer, Perimeter Institute
More institutions are interested to join: TRIUMF, Snowlab
# Cultural Collisions Canada – week schedule

## Monday, April 9, 2018

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
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<tbody>
<tr>
<td>9:00 AM</td>
<td>Welcome to the Exhibit Area – York University</td>
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## Tuesday, April 10, 2018

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## Wednesday, April 11, 2018

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## Thursday, April 12, 2018

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## Friday, April 13, 2018

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## Saturday, April 14, 2018

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## Sunday, April 15, 2018

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Cultural Collisions
by ORIGIN - Croatia

Science: from Astrophysics to Particle Physics

- First exhibition September 17th – 22nd 2018  Venue: Old City Hall
  Research & Inspiration for students
- Second exhibition: do be fixed still
- Public presentation and talks during the LHC Days in Split / Palazzo Milesi

Art: International art@CMS collaborative artists and local artists

Organization:
University of Split: general organization
art@CMS: Exhibition curation  ORIGIN: Scientific curation
ORIGIN – South East Europe :
art@CMS, ATLAS, CERN, CMS, LIGO/VIRGO, Muographer, University of Split
Cultural Collisions
by ORIGIN – Croatia  [September 17th – 21st]

workshop program:

- **Workshop 1:** Thursday 15h
  - Gravitational waves - building interferometers
  - Martin Hendry, Chiara Mariotti, Nikola Godinović with teachers and students from the Science and Math gymnasiums
  - Number of students: about 20 + few teachers

- **Workshop 2:** Thursday 17h00
  - Higgs boson discovery - event display
  - Claire Adam Bourdarios, Chiara Mariotti, Ivica Puljak with teachers and students from the Science and Math gymnasiums
  - Number of students: about 20 + few teachers

- **Workshop 3:** Friday 15h
  - Gravitational Waves - extreme processes in the universe
  - Martin Hendry, Nikola Godinović with teachers and students from the Art school
  - Number of students: about 20 + few teachers

- **Workshop 4:** Friday 17h00
  - Creating musics with physics - Arduino and other platforms programming
  - Chiara Mariotti, Michael Hoch, Ivica Puljak with teachers and students experienced in robotics + a teacher of music
  - Number of students: about 20 + few teachers

- **Workshop 5:** Friday 18h30
  - Origin and evolution of universe
  - Nikola Godinović, Ivica Puljak with primary school teachers and students
  - Number of students: about 20 + few teachers  Workshop 1: Thursday 15h

public lectures program:

**Tuesday 18h30** Science & Art - Michael Hoch

**Thursday 18h30** Listening to Einstein’s Universe – the Discovery of Gravitational Waves – Martin Hendry

**Thursday 20h00** Round Table Discussion - Understanding the World Through Arts and Science – Nikola Godinovic

**Friday 18h30** LHC physics – James Beacham
1. Introduction

When I left school I went to work as a technician for the Physics and Astronomy department at a university in London. I trained as an engineer and spent many years designing and building equipment for the research groups there. My interest in science grew as I worked with these groups and got a better understanding of the science they were researching. I loved my job because it gave me so much insight into the science involved.

When I left that job and started as an artist I found that the excitement of science was something I didn't want to move away from. So, I decided to use science as the inspiration for my art. Most of the art I make comes from some bit of science that has seeded an idea. Science is a tool for letting us see our world more clearly, and for me it also inspires my work. By the way, I have not moved very far from the university I worked at. I am Artist in Residence for the Astronomy group and the High Energy Physics groups there, as well as being part of the art@CMS project run by Michael Hoch at CERN.

UK collaborative artists:
Rachael Nee, Andy Charalambous

in preparation:
“data sonification” by Federico IT,
“particle detection” by Ch. Henschke AU
Combining the imageries of the machinery of CERN with the curvilinear environment of the Architects of Air dome creates an incredibly intriguing layer of visual experience.

art@CMS & Architects of Air

is a synthesis of 2 unique partners whose core activity address the wonder of light and the wonder of the universe.
art@CMS: collaborative artist CONSENSUS
CONSENSUS participates as well in science & artworkshops

UK Rapper launches album CONCERNED
after 2 years of collaboration his science rap album ConCERNed. His scientific partner is Sudan Paramesvaran / CMS Bristol UK

CERN Article (all info):

More Infor & Links:
• The BBC interview of ConSensus and Sudan [the sequence starts at 1:11.18 until 1h26.26]
  • http://www.bbc.co.uk/programmes/p04zv0g0#play
  • https://www.youtube.com/watch?v=MJXaBq5VTNc
• Press article in the journal “The Voice” here’s the online version:
  • http://www.voice-online.co.uk/article/south-london-geneva-hip-hop-science-lessons
• Two music videos of the 9 tracks from the album is available on youtube
  • https://www.youtube.com/watch?v=UjIArzk8g&feature=youtu.be
  • https://www.youtube.com/watch?v=1ju3fo37LyE&feature=youtu.be
  • https://www.youtube.com/watch?v=2UpDCfq-LA
Fame  <->  Failures

- bottom up -> depends on engagement of participating communities
- budget situation -> based on collaboration effort
- Support -> not depending on any lobby
- Topics -> large diversity possible
- Framework -> flexible in set up to satisfy needs of involved partners
- ART / EDU -> strong artistic focus or more educational aspect possible
- impact -> strong with wide reach out
THANK YOU for you attention

Please don’t hesitate to discuss with our ORIGIN collaborators:

Claire Adam Bourdarios claire.bourdarios@cern.ch ATLAS CERN; Martin Hendry martin.hendry@glasgow.ac.uk LIGO/VIRGO; 'Mark Boland' Mark.Boland@lightsource.ca CANADA; Greg Dick gdick@perimeterinstitute.ca CANADA; Chiara Mariotti chiara.mariotti@cern.ch CMS CERN; Mick Storr Mick.Storr@cern.ch CMS CERN; Sopholis sotiriou@ea.gr GREECE, Ivica Puljak ivica.puljak@fesb.hr CMS Croatia; Nikola Godinovic nikola.godinovic@fesb.hr CROATIA; Djurdjina Bulatovic djurdjina.bulatovic@mna.gov.me MONTENEGRO; SanjaDamjanovic Sanja.Damjanovic@cern.ch MONTENEGRO; Goran Djordjevic goranj@junis.ni.ac.rs SERBIA; James Beacham J.beacham@cern.ch Peter Krieger krieger@physics.utoronto.ca CANADA; Achille Petrilli Achille.Petrilli@cern.ch CMS, CERN, Brigitte DeMonte brigitte.de.monte@oeaw.ac.at HEPHY AUSTRIA

contact: address: Dr. Michael Hoch, CERN, CH 1211 Geneva 21, Switzerland - email: Michael.Hoch@cern.ch - phone: +41 75 411 5720
EXHIBITION
JUNE 7th-17th 2017

CIRCUIT TRAINING
FOAM INTO THE WORLD OF THE LARGE HADRON COLLIDER

PRIVATE VIEW
21ST APRIL, 6PM - 9PM
14TH - 21ST APRIL
10AM - 6PM WEEKDAYS ONLY

TRIANGLE SPACE
CHELSEA COLLEGE OF ARTS
16 JOHN ISLIP STREET, SW1 4JU

Arte & Scienza
"30 opere di artisti internazionali illustrano la scoperta del bosone di Higgs al CERN"

Xavier Gergorin
Michael Hoch
Ali Mendel
Paul Fiaschi
Toni Maniscalco

Pinchuk Family (PNF) NAPOLI
Michael Hoch (CERN) per ART023
Welcome to our art@CMS NetWork

Web Page:  https://artcms.web.cern.ch/  summary dossier :  http://mhocch.web.cern.ch/mhocch/Art@CMS/Art@CMSprojects.pdf
Contact email:  Michael.Hoch@Cern.ch  art@CMS steering comity : art-at-CMS@cern.ch chair : Chiara Mariotti