International Particle
Physics Outreach Group

18th IPPOG Meeting – CERN– 29 Nov 2019

Exhibits & Exhibitions WG Report

H.P. Beck, *Universität Bern, Chair*

S. Goldfarb, *University of Melbourne, Chair*

Hot Air Balloons Exhibition at Château-d'Oex

Summary

- A museum that initially had nothing to do with science, particle physics, accelerators, CERN, the Universe, etc. was thinking about its next temporary exhibition - initially only Michael's art was an attractor.
- A narrative with local relevance allowed to bring the visitor, who expected balloons, to get driven into particle physics and the modern understanding of the Universe in an easy to follow story starting with balloon flights in 1909.
- Adding works of art related to the science shown adds another level of how to emotionally involve visitors in the subject.
- Visitors were taken in unexpectedly and were immediately fascinated.
- The museum attracted many more visitors than in other years.
- The museum is planning to prolong this temporary exhibition by one more year till March 2021!
- Even in a geographically detached and rural location, particle physics enacts fascination !

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Art & Science Exhibition in Zagreb
Museum of Contemporary Art - 2022

Art and Science Exhibition

- Art connected with fundamental science
- Science from ORIGIN network
  - CERN, Gravitation waves, Muongraphy, ICECUBE, DUNE, astro-particle et al
- Workshops for students
  - From kindergarten to universities
  - **Cultural Collisions** format *(see Michael's talk)*

Bulding on the experience from ORIGIN and Art@CMS

- Exhibitions already organised in the region Contacts with musem already established
- They are very enthusiastic
- Starting the project very soon (for 2022)

ORIGIN cross-disciplinary science education, engagement & networking

Supported by

ATLAS, ALICE, CMS, LHCb, LIGO, VIRGI, ICEcube, DUNE, Muography, Perimeter Institute, Canadian Light Source, and other international partners

Objectives:

cross-disciplinary science engagement & networking with special emphasis on education

THINK globally ACT locally –

- support our science community where they need support -> at their HOME country
- “Arts as a tool to engage actively - empower them to own the topic and allow them to contribute”

Scientific Methodology triggers Critical Thinking

Art fosters Creative Thinking

Oman

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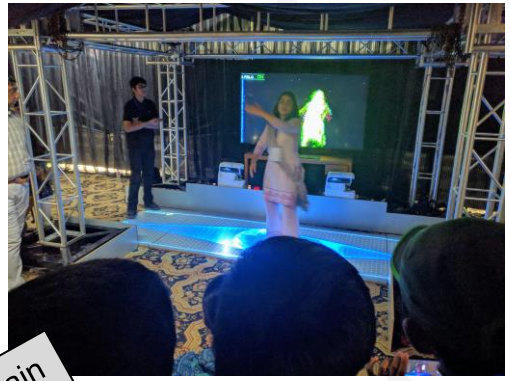
Recent Lessons in Engagement Abroad at the CERN Media Lab



Bahrain

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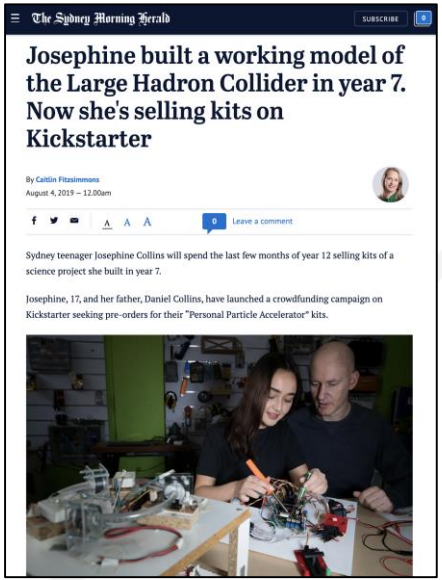
Josephine’s Personal Particle Detector


The Sydney Morning Herald

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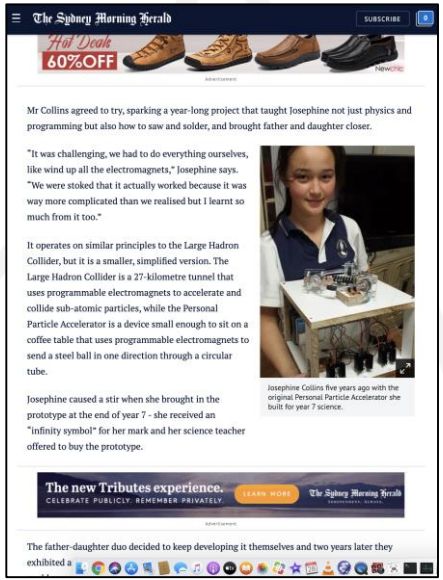
Josephine built a working model of the Large Hadron Collider in year 7. Now she's selling kits on Kickstarter

By Caitlin Fitzsimmons
August 4, 2019 — 12.00am

Leave a comment

Sydney teenager Josephine Collins will spend the last few months of year 12 selling kits of a science project she built in year 7.

Josephine, 17, and her father, Daniel Collins, have launched a crowdfunding campaign on Kickstarter seeking pre-orders for their "Personal Particle Accelerator" kits.


The Sydney Morning Herald

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Hot Deals 60%OFF

Mr Collins agreed to try, sparking a year-long project that taught Josephine not just physics and programming but also how to saw and solder, and brought father and daughter closer.

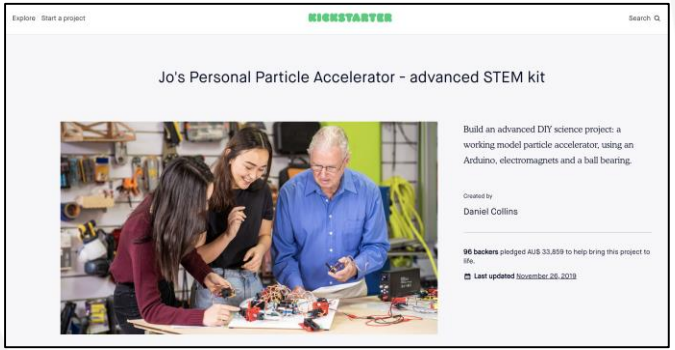
"It was challenging, we had to do everything ourselves, like wind up all the electromagnets," Josephine says. "We were stoked that it actually worked because it was way more complicated than we realised but I learnt so much from it too."

It operates on similar principles to the Large Hadron Collider, but it is a smaller, simplified version. The Large Hadron Collider is a 27-kilometre tunnel that uses programmable electromagnets to accelerate and collide sub-atomic particles, while the Personal Particle Accelerator is a device small enough to sit on a coffee table that uses programmable electromagnets to send a steel ball in one direction through a circular tube.

Josephine Collins five years ago with the original Personal Particle Accelerator she built for year 7 science.

Josephine caused a stir when she brought in the prototype at the end of year 7 - she received an "infinity symbol" for her mark and her science teacher offered to buy the prototype.

The father-daughter duo decided to keep developing it themselves and two years later they exhibited a


Explore Start a project

KICKSTARTER

Search

Jo's Personal Particle Accelerator - advanced STEM kit

Build an advanced DIY science project: a working model particle accelerator, using an Arduino, electromagnets and a ball bearing.

Created by
Daniel Collins

96 backers pledged AU$ 33,859 to help bring this project to life.

Last updated November 26, 2019

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Exhibits for Post-LHC Machines

The Code of. The Universe

- A photographic travelling exhibition
- Pilot project following recommendation by CERN's Host States
- Highlight the main physics questions, the key technologies to explore them and the societal impact (with a focus on areas covered by the FCC study)
- Co-developed with Lammerhuber editions
- Multilingual content & online website
- Cities opened so far: Vienna, Wiener Neustadt, Graz, Brussels, Grenoble coupled to conferences & public events

Questions - Future Steps

- How can we communicate about future RIs to the general public?
- Which are the topics we need to include as part of an exhibition (physics, technology, applications, socio-economic impacts)?
- How can we make exhibitions more interactive?

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Common Themes and Thoughts

Common Themes of ORIGIN / CERN Traveling Exhibitions

- Exhibitions support local engagement, local champions
- Create points of contact to local networks
- Local organisation is essential and desired

Take Aways

- Key points IPPOG made to EPPSU 2020 (published note, discussion with WG5)
  - Global support for science needs to be fostered and supported
  - Post-LHC projects will require major public support
  - IPPOG serves as a means to foster and optimise local involvement with global strategies
- Efforts like ORIGIN and CERN Traveling Exhibit are directly in line with these points
  - Both create and support local networks of artists, scientists, educators, stakeholders
  - Both promote science through excitement of current research, while embracing local culture
- There is much room for IPPOG to become involved
  - We need to be involved in strategic planning
  - This does not mean taking ownership, but it means securing support