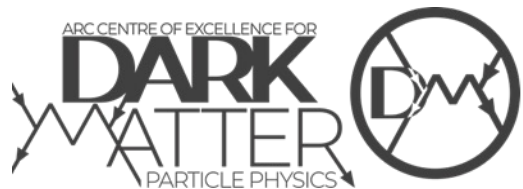


# Applied Innovation Lab

So what is that again...?

Professor Christine Thong



**purpose**

increase societal impact  
+ reach of CDM  
(assist objective g)



## purpose

increase societal impact  
+ reach of CDM  
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## how:

- Translation ideas
- build innovation skills + capacity



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## how:

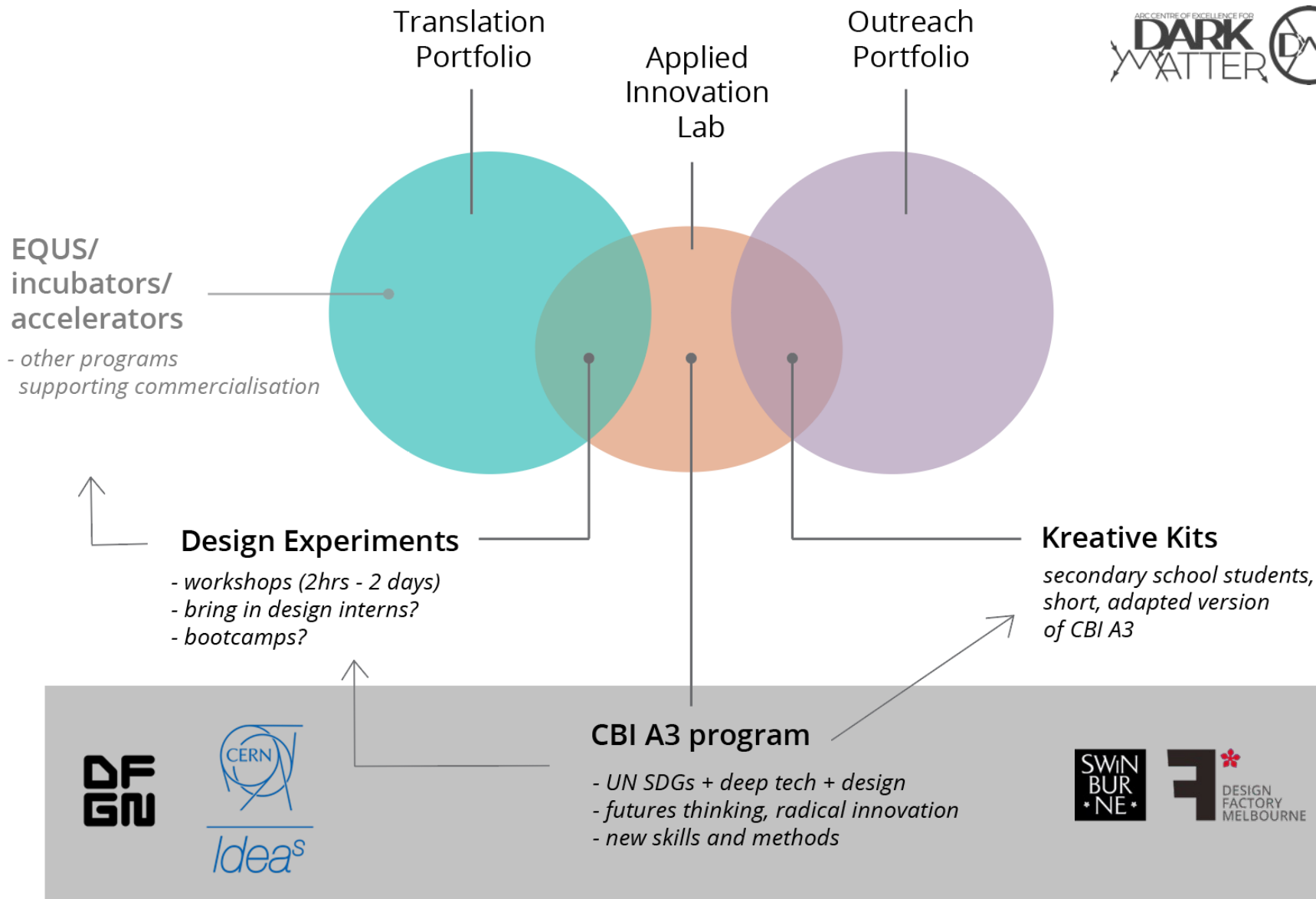
- Translation ideas
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**how:**

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# Human-centred design



## Embrace

- Incubator for babies
- Affordable ~\$25 USD,
- Developed by students at Stanford University

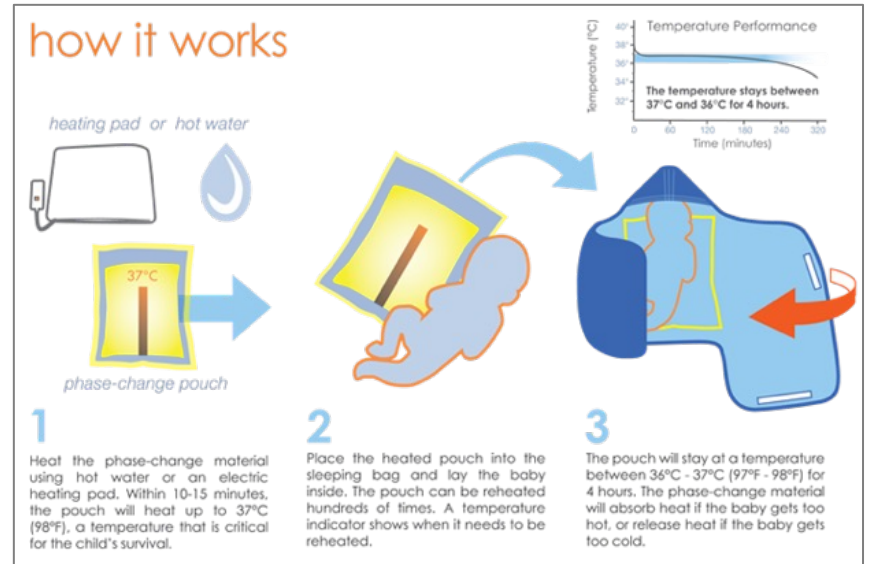


Image sources:

<http://cargocollective.com/futurehealth/Embrace-Infant-Warmer>

<https://www.fastcompany.com/1685394/embrace-infant-warmer-gets-its-first-test-baby>

<https://heymama.co/embrace-innovations-jane-chen/>

# Human-centred design



> Cardboard Prototype



> Plywood Prototype



> Semi-resolved



> Proof of Concept

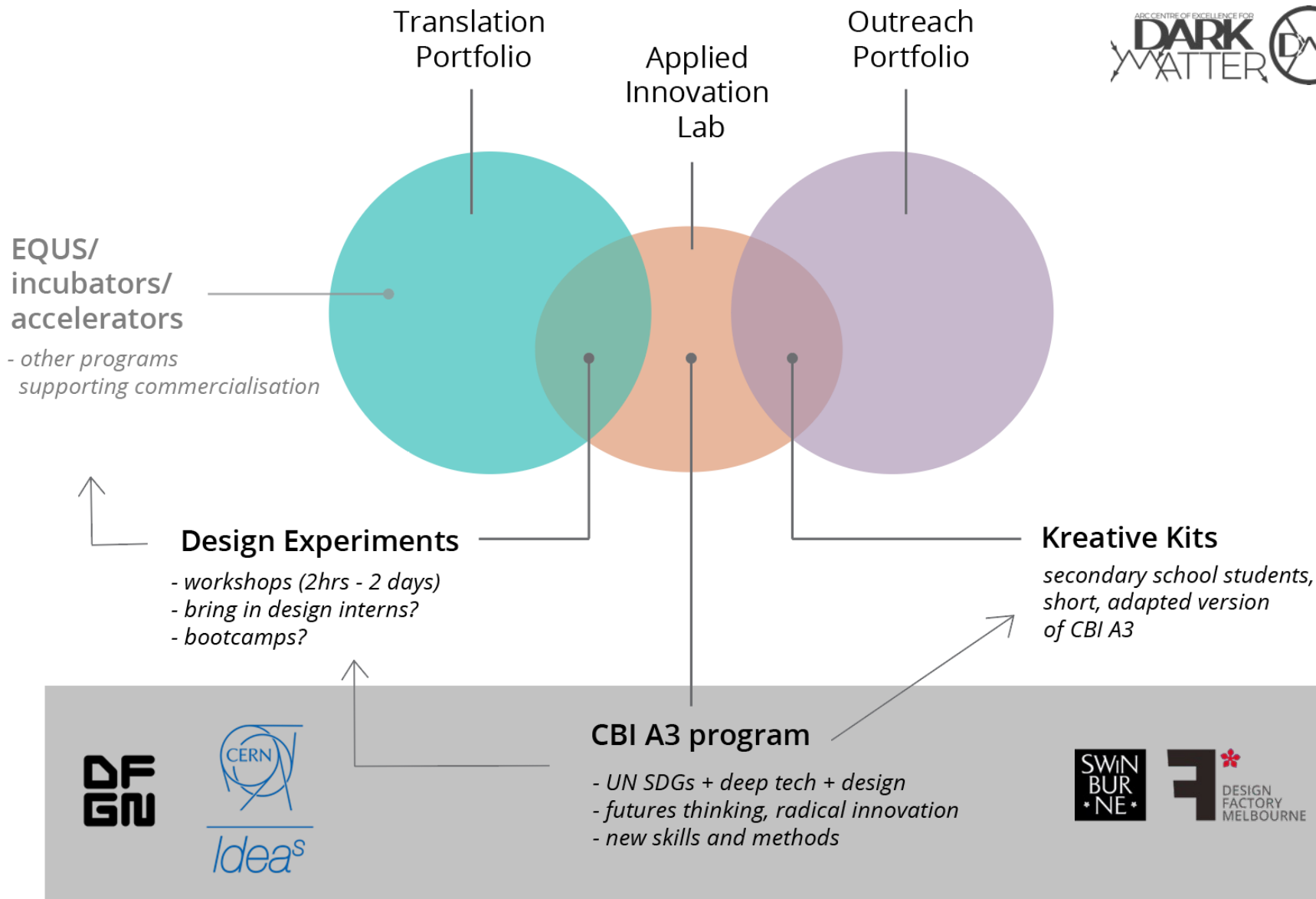


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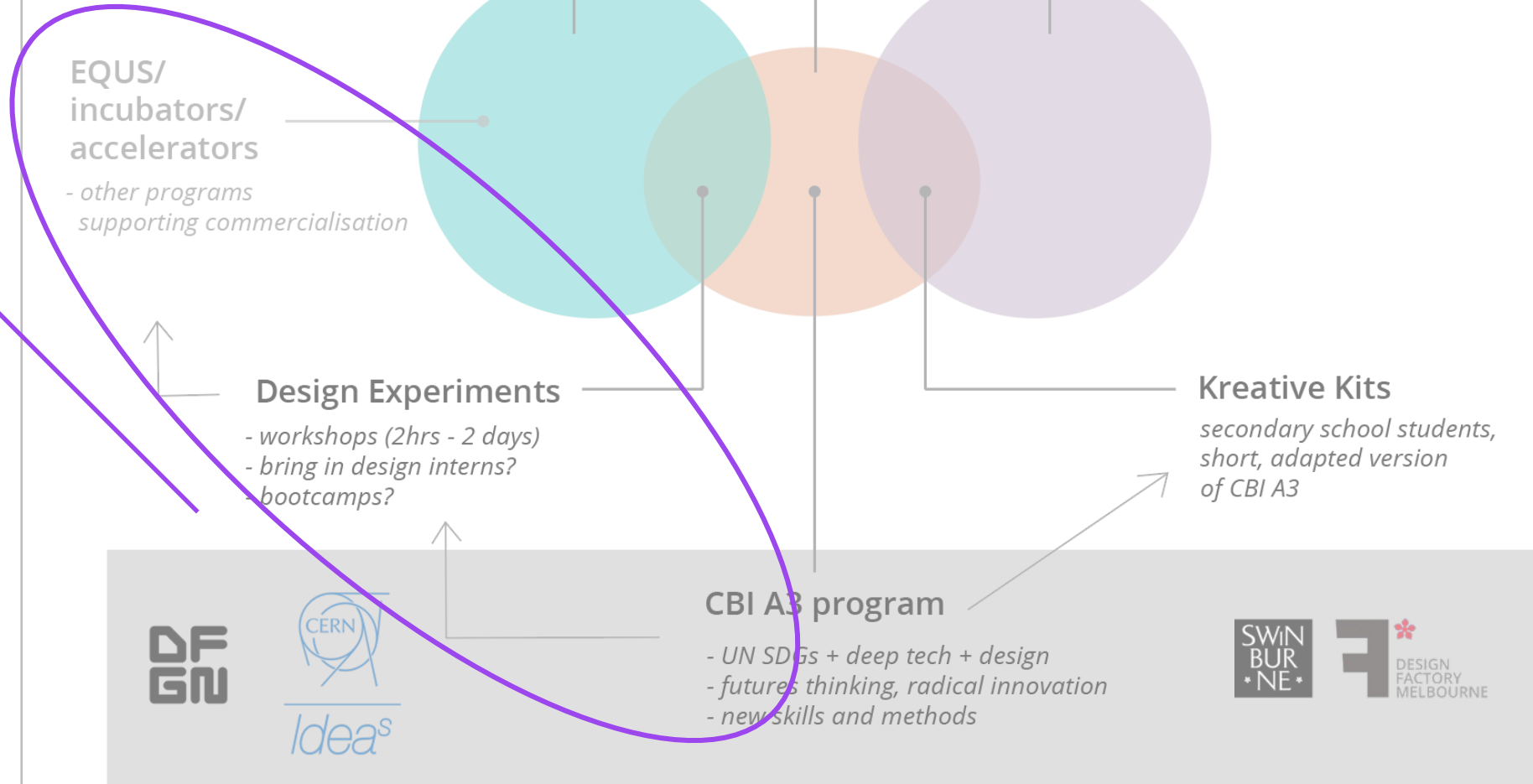
**purpose**

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(assist objective g)

**how:**

- Translation ideas
- build Innovation Skills + capacity

**A pipeline for commercial translation**



# DF GN DESIGN FACTORY GLOBAL NETWORK

(PHYSICAL INNOVATION LABS)



## Design factories around the world

**DF GN** DESIGN FACTORY GLOBAL NETWORK

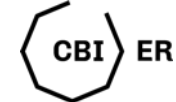
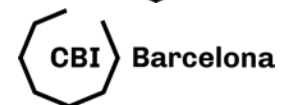
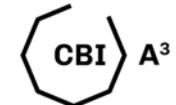
DESIGN FACTORIES LISTED BY YEAR OF FOUNDING

01 AALTO UNIVERSITY DESIGN FACTORY Aalto University, Helsinki, Finland (2008)	09 FRISIAN DESIGN FACTORY NHL Stenden University of Applied Sciences, Leeuwarden, the Netherlands (2015)	16 DESIGN FACTORY NEW ZEALAND Wintec, Hamilton, New Zealand (2017)	24 HAMK DESIGN FACTORY Häme University of Applied Sciences, Hämeenlinna, Finland (2019)
02 SINO-FINNIISH CENTRE Tongji University, Shanghai, China (2010)	10 METU DESIGN FACTORY Middle East Technical University, Ankara, Turkey (2016)	17 WARSAW DESIGN FACTORY Warsaw University of Technology, Warsaw, Poland (2017)	25 ST. JOHN'S UNIVERSITY DESIGN FACTORY St. John's University, New York City, USA (2019)
03 DESIGN FACTORY MELBOURNE Swinburne University of Technology, Melbourne, Australia (2011)	11 DESIGN FACTORY JAVIERIANA BOGOTÁ PUC Javeriana, Bogotá, Colombia (2016)	18 FUSION POINT ESADE, Universidad Politècnica de Catalunya and IED Barcelona, Barcelona, Spain (2017)	26 HANNAM DESIGN FACTORY Hannam University, Daejeon, South Korea (2019)
04 DUOC DESIGN FACTORY Duoc UC, Santiago de Chile, Chile (2012)	12 NYC DESIGN FACTORY Pace University, New York City, USA (2016)	19 KYOTO DESIGN LAB Kyoto Institute of Technology, Kyoto, Japan (2017)	27 SHENKAR DESIGN FACTORY Shenkar College, Tel Aviv, Israel (2019)
05 IDEASQUARE @CERN CERN, Geneva, Switzerland (2014)	13 RTU DESIGN FACTORY Riga Technical University, Riga, Latvia (Oct 2016)	20 CALI DESIGN FACTORY PUC Javeriana, Cali, Colombia (2017)	28 OPER.SPACE University of Bologna, Bologna, Italy (2019)
06 DESIGN FACTORY KOREA Yonsei University, Seoul, South Korea (2015)	14 UPV DESIGN FACTORY Universidad Politècnica de València, Valencia, Spain (2017)	21 INNO.SPACE Hochschule Mannheim, Mannheim, Germany (2018)	29 TECHNOVATION HUB KU Leuven, Leuven, Belgium (2020)
07 PORTO DESIGN FACTORY Porto Polytechnic, Porto, Portugal (2015)	15 DESIGN FACTORY SÃO PAULO Universidade São Paulo, São Paulo, Brazil (2017)	22 UNIVERSITY OF TARTU DELTA SANDBOX University of Tartu, Tartu, Estonia (2018)	30 DESIGN FACTORY LONDON Brunel University London, UK (2020)
08 NEXUS DESIGN FACTORY Thomas Jefferson University, Philadelphia, USA (2015)		23 SIT DESIGN FACTORY Singapore Institute of Technology, Singapore (2018)	31 NANDIN ANSTO, Sydney, Australia (2020)

Lorem Ipsum



e.g.



37 Design Factories | 5 Continents | 30+ Hugging Points



**Medipix technology**  
 Read-out chip for particle imaging and detecting  
 (+ other technologies)

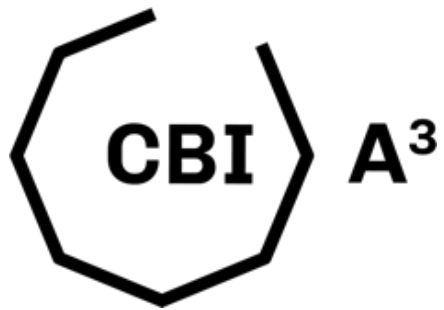


**Outcome:**

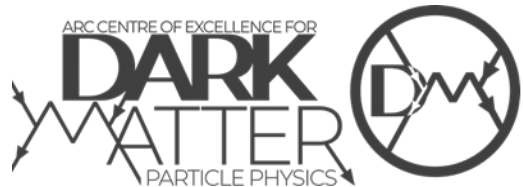
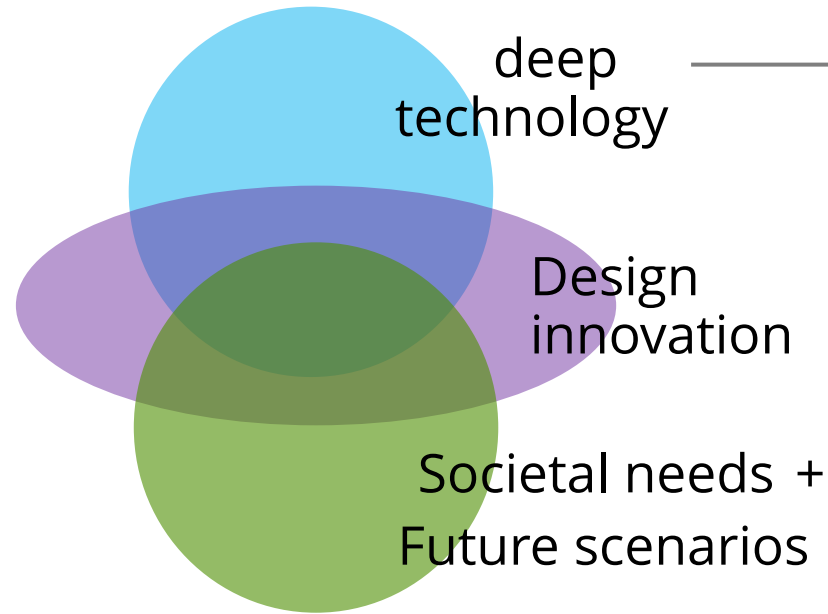
- Demonstrate technology potential
- Early-stage idea exploration



Airport scanning system for illicit and/or biohazardous substances



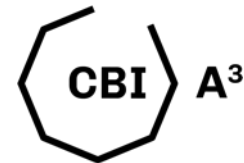
# Challenge Based Innovation Program



This project has received funding from the European Union's Horizon 2020 research and innovation programme under grant agreement No. 101004462



2 week intensive 'bootcamp' (part of 6 month UG/PG program)





**we worked...**

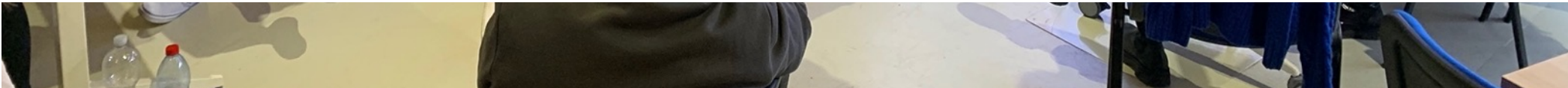


we worked...





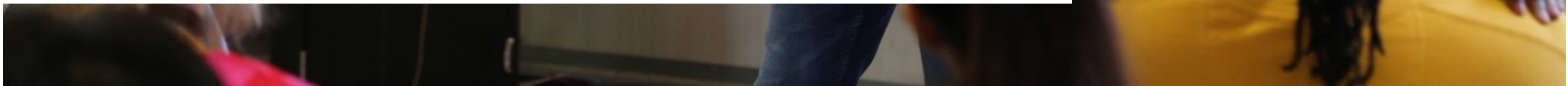
**Quick prototypes to demonstrate ideas**







**Innovation through a physics perspective**





**Innovation through a physics perspective**



**we toured CERN**



**we toured CERN**



**Some CERN site visits**

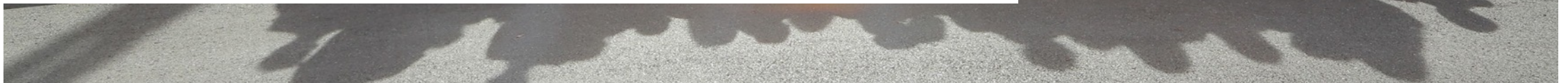


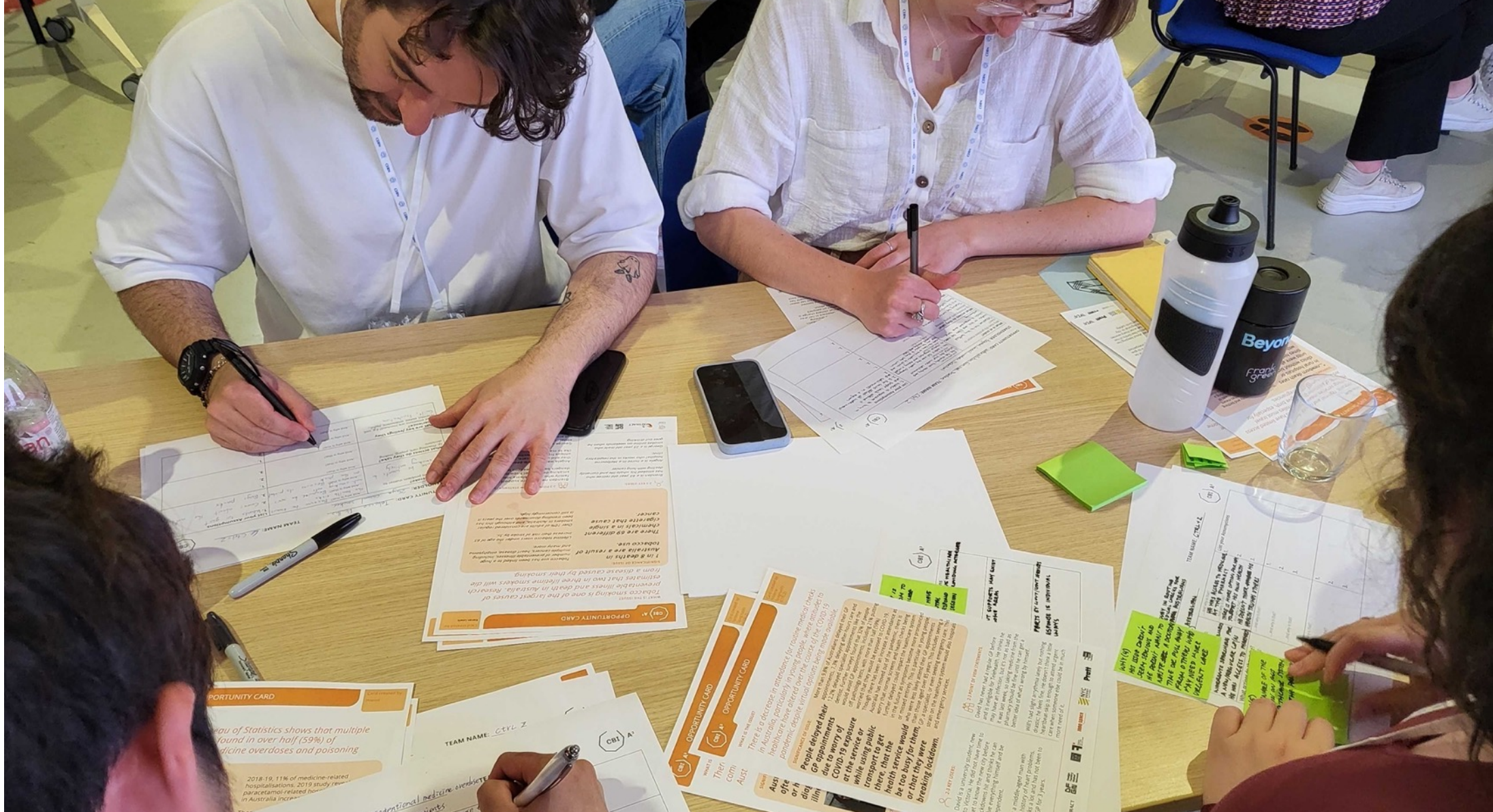


**we visited the United Nations**



**we visited the United Nations**





back to work







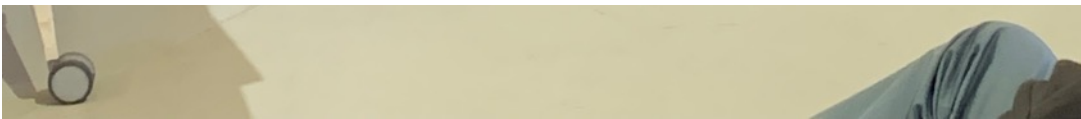
**A prototyping space at IdeaSquare**



**Lots of different ideas, rapid exploration**

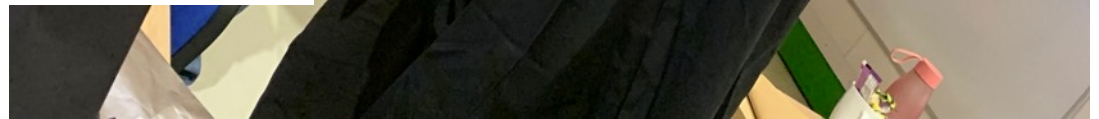
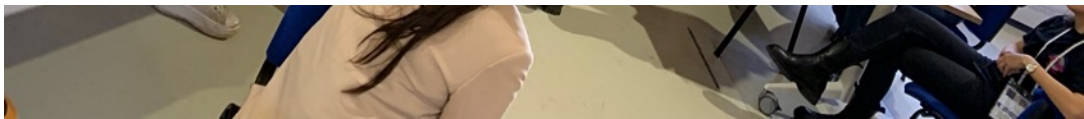


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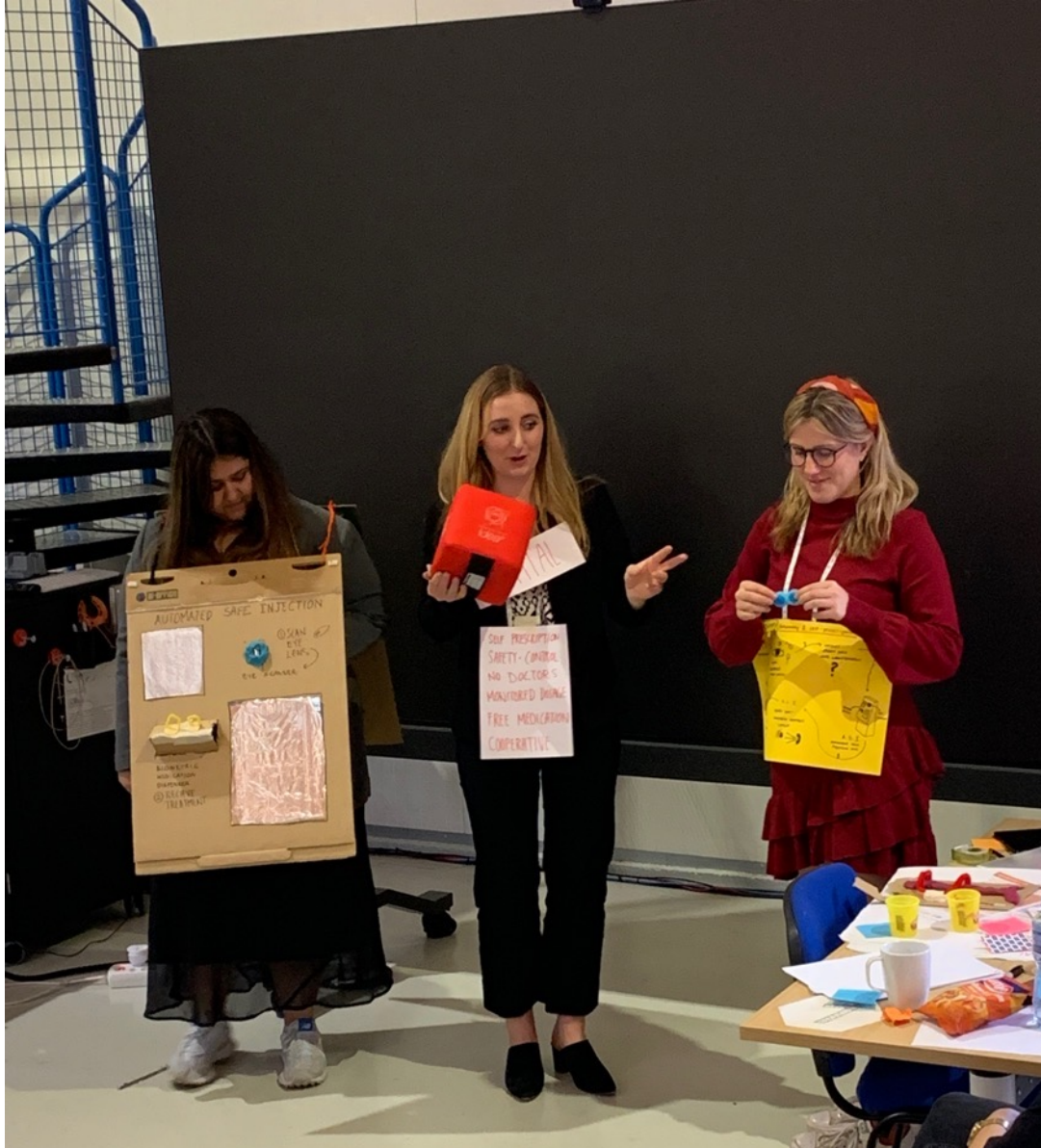


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**Lots of different ideas, rapid exploration**

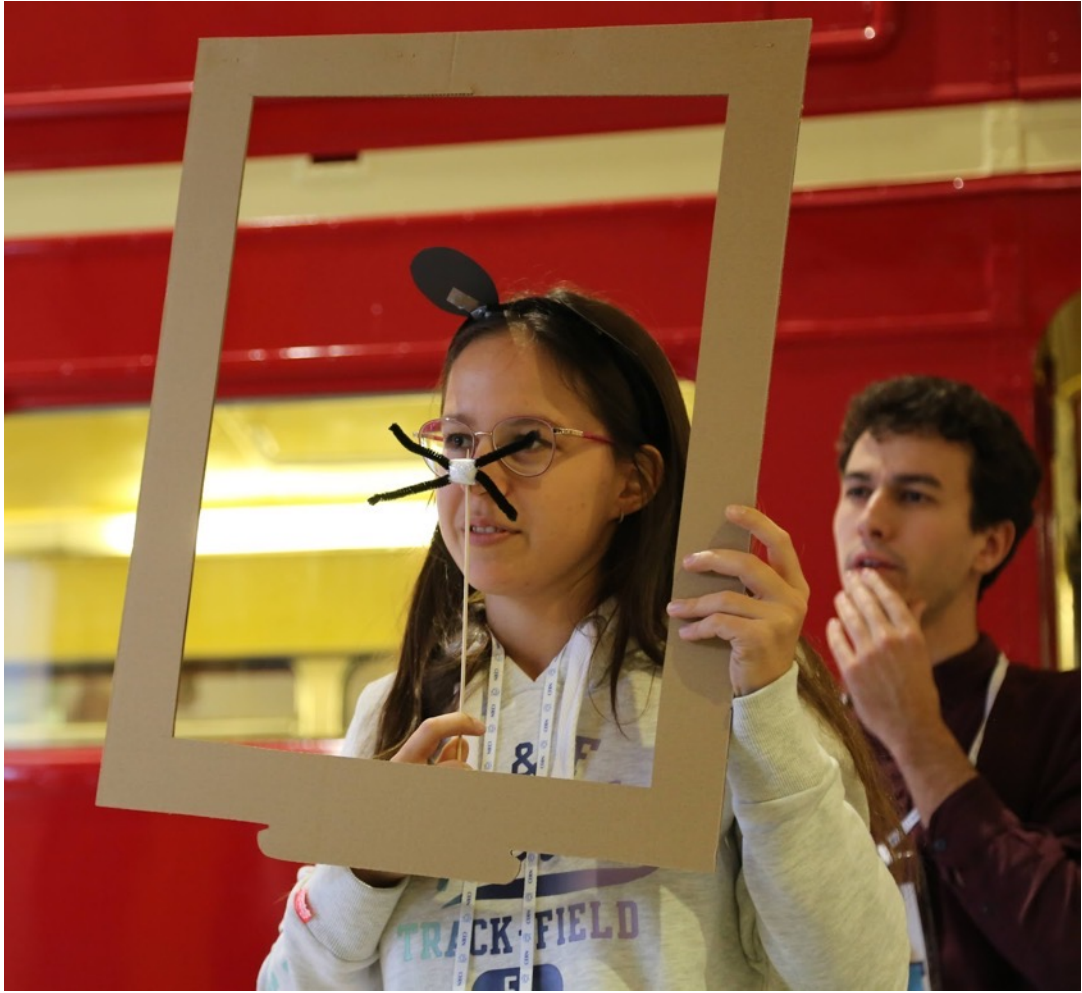


**Lots of different ideas, rapid exploration**





**Lots of different ideas, rapid exploration**



**Lots of different ideas, rapid exploration**





# CERN Know



C. Filipe Ramos [cf.ramos@cern.ch](mailto:cf.ramos@cern.ch)  
Business Development  
CERN Knowledge Transfer

**We learnt about knowledge transfer + cernies**



**Physics inspired innovation, e.g. terraforming**

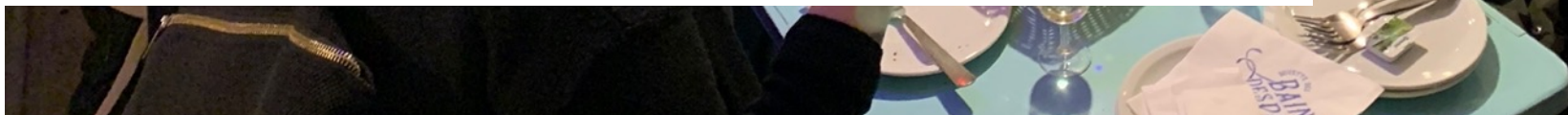




**Physics inspired innovation, e.g. terraforming**



**Fondue, Geneva Lake, etc.**





ideas presented!!!



# Expressions of Interest!

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Science Mentor for tertiary design innovation students, CBI A3 program

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2 or 3 week innovation experience at IdeaSquare, CERN (Geneva)



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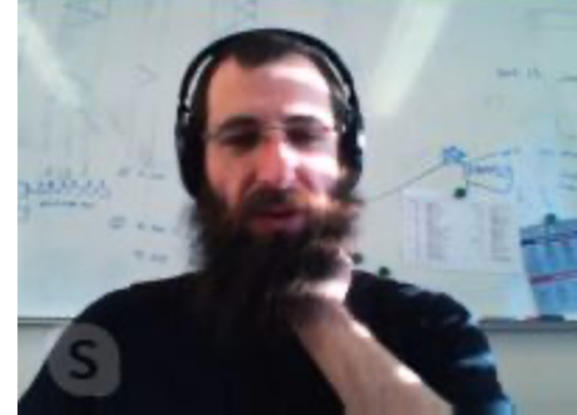
# Science mentor for UG/PG design innovation teams



# Science mentor for UG/PG design innovation teams

## Seeking 2 x mentors!

Science + technical perspective, giving feedback to new application ideas using deep technology

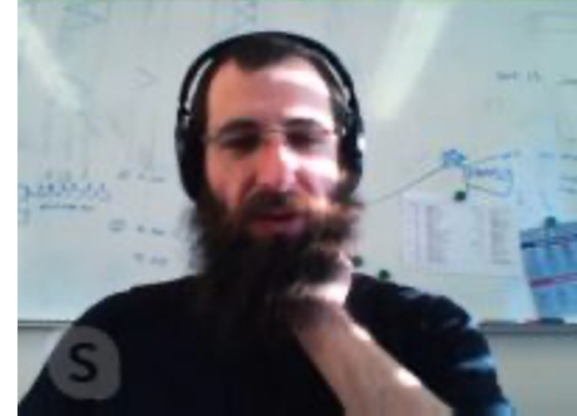


# Science mentor for UG/PG design innovation teams

## Seeking 2 x mentors!

Science + technical perspective, giving feedback to new application ideas using deep technology

- Approx 10-12 hours spread over 6 months
- Attend ~3 x online presentations to give feedback
- As required, individual consultation meetings with student team



# Physics-inspired innovation methods bootcamps



# Physics-inspired innovation methods bootcamps

## CERN or ANSTO locations

Methods like terraforming, multi-verse thinking, orders of magnitude thinking



# Physics-inspired innovation methods “bootcamp”

## CERN or ANSTO locations

Methods like terraforming, multi-verse thinking, orders of magnitude thinking

- 2 or 3 weeks, mid-year?
- Work in teams, aimed at cross-node collaboration
- Hands-on project, exploring environmentally sustainable and socially responsible new applications of deep technology for FUTURE (e.g. 2030 and beyond)







# Expressions of Interest!

Science Mentor for tertiary innovation students, CBI A3 program

2 or 3 week innovation experience

at IdeaSquare, CERN (Geneva) or ANSTO (Lucas Heights)

