



# Outreach and Education at APC

## The Paris Centre for Cosmological Physics



[www.pariscosmo.fr](http://www.pariscosmo.fr)



[PCCP\\_Paris](https://twitter.com/PCCP_Paris)



[PCCPtv](https://www.youtube.com/PCCPtv)

# The PCCP

PCCP is an APC internal structure devoted to outreach, education, and the connection between science and society

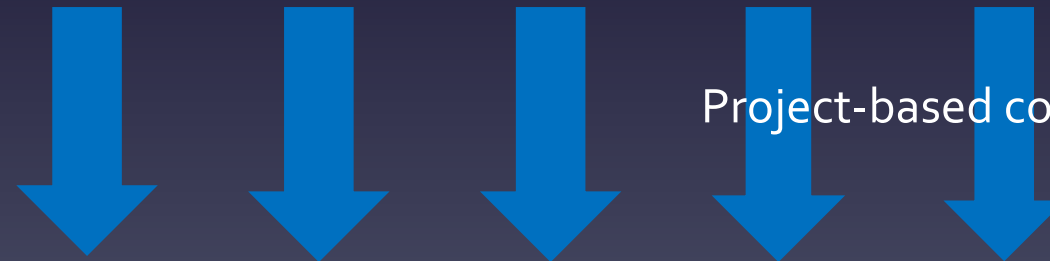
## The team

Director

Matteo Barsuglia  
(CNRS – Gravitational Waves)

Project Manager

Giulia Vannoni  
(UPC)



APC researchers and engineers

# The PCCP

PCCP focuses on the idea of a science embedded in society and actively contributing to pressing societal issues, like social justice, inclusion, and the climate crisis, through reflection, interdisciplinary actions and field work.

## Major ongoing actions:

- *Teaching the Universe* – 2-day workshops for high-school teachers (since 2011).
- *Le cosmos dans mon école* – workshops in high-schools.
- *PHYSIS* – systematic study of the impact of researcher's workshops in high-schools to reduce educational inequalities (gender, socio-economical...).
- *F3: Filles et Femmes aux Frontières de l'Univers* - internships and tutorship for young women at APC.
- *Apprentis Chercheurs* – year-long tutorship for high- and middle-school students.
- *Starlab* – Workshops for hospitalised children at the pediatric hospital Robert Debré.

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## Major ongoing actions:

- *Outreach Centre at APC* – space for general publics/schools equipped with pedagogical instruments.
- *Art Residences at APC* – exchange between artists and scientists giving rise to new artworks.
- « *Diversity and inclusion* » working group at APC.
- *Café diversité* - journal club on social sciences research on three interrelated subjects: diversity and inclusion, the environmental emergency, and education.
- *WEL: Women Exploring the Limits* – webinars by female scientists on their research.
- *Development of board-game* about women in science with IPGP.


# Teaching the Universe

**INFLATION**

at  $10^{-35}$  second  
 predicts space is flat

and accounts for origin of density fluctuations that later formed galaxies

locally flat




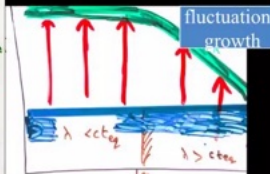
SEPARATION

HORIZON

EXPANDS AT SPEED OF LIGHT

most mass within galaxy

TIME

Joe Silk



  
<http://pariscosmo.fr>

## ENSEIGNER L'UNIVERS TEACHING THE UNIVERSE

9 & 10 mai 2019  
 Université Paris Diderot  
 Bâtiment Condorcet / APC

9 Mai

- 09h00 Accueil et présentation du programme
- 09h30 Astroparticule et cosmologie
- 10h00 Introduction à la cosmologie
- 11h00 Théorie & expériences sur le CMB
- 11h45 Matière noire
- 14h00 Ondes gravitationnelles : Théorie
- 14h45 Ondes gravitationnelles : Détection
- 16h00 Atelier Data OG

10 Mai

- 09h00 Premières minutes
- 09h45 Neutrinos
- 11h00 Energie noire
- 11h45 Astronomie multi-messager
- 14h00 Ateliers CMB
  - Calculer l'âge de l'Univers
  - Détecter le CMB
- 16h00 ITV Smoot
- 17h00 Bilan

<http://pariscosmo.in2p3.fr/fr>

PARIS  
 DIDEROT



UnivEarthS





# Outreach projects with teachers and students



Le Cosmos  
dans mon école

Judi 20 mai 2021

Collège Pierre Weczerka  
Chelles

En collaboration avec  
**FRONTIERS**  
Avec le soutien de la  
FONDATION CFM  
POUR LA RECHERCHE



FRONTIERS winter school

BROADCASTING LIVE:  
[facebook.com/frontierseu](https://facebook.com/frontierseu)

**VIRTUAL VISIT TO CERN** Friday 29 January 2021  
18.00-19.00 CET

Co-funded by the Erasmus+ Programme of the European Union

**FRONTIERS**  
Research with the European Union

**REINFORCE**

**ESA**  
European Space Agency



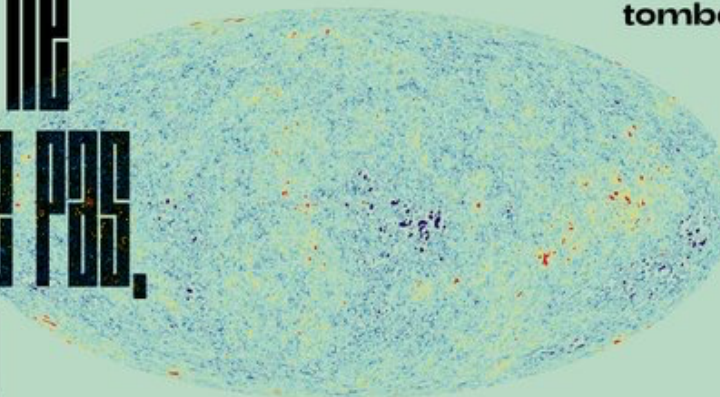
# Outreach projects with teachers and students





# Art residencies

**CE QUI NE  
TOURNE PAS,  
TOMBE.**



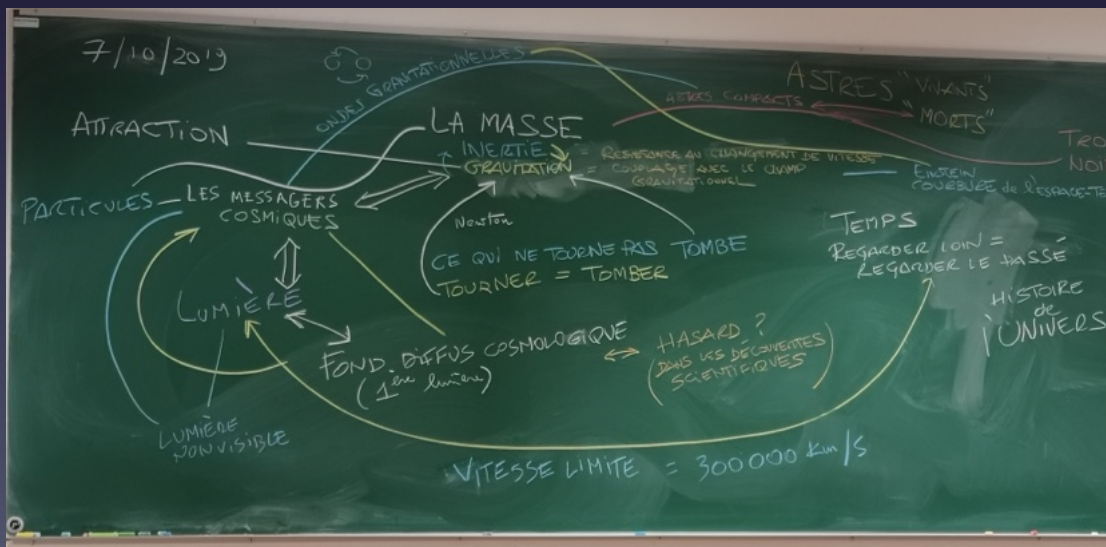
DANS LE CADRE DE LA 70<sup>E</sup> ÉDITION DE JEUNE CRÉATION  
**Ce qui ne tourne pas, tombe. 12.09.**  
 — 25.09.2020

Espace Niemyer  
 2, place du Colonel Fabien  
 75019 Paris  
 Porte C  
 Entrée libre sur inscription

Vernissage  
 12.09.2020 16h-19h

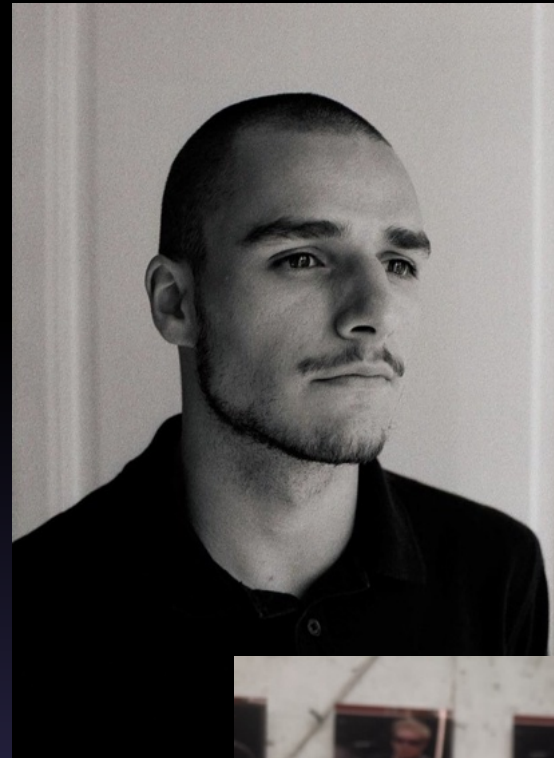
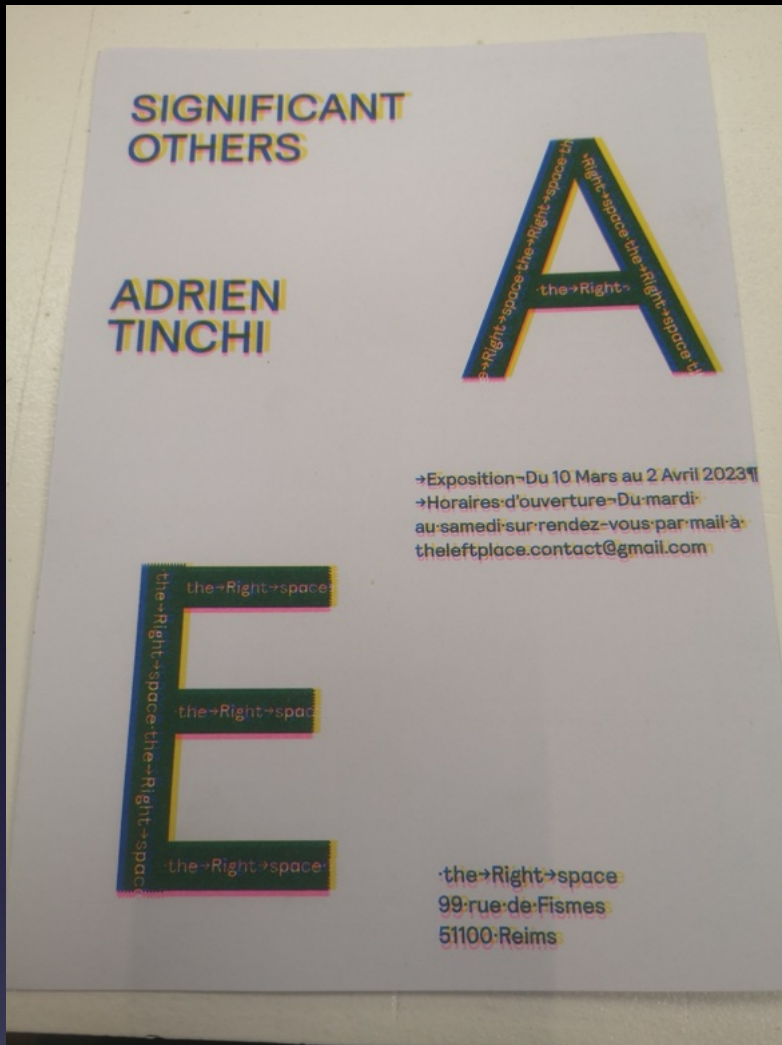
Carla Adra · Alexandre Aïry  
 —  
 Chevaline Corporation · Elise Kessels  
 —  
 First Laid + Zoé Cosson  
 —  
 Juan-Ignacio Lopez  
 —  
 Jesse Wallace

JEUNE CRÉATION | ESPACE NIEMEYER | CABANE GEORGINA | GALERIE THADDAEUS POPAC | ÉCOLE SUPÉRIEURE D'ART ET DE DESIGN DE REIMS | UnivEarthS





# Art residencies



# Festival des idées Paris

**A-PC**  
Alliance Sorbonne  
Paris Cité

**Voir l'univers  
autrement**

Matteo Barsuglia,  
Sylvain Chaty,  
David Larousserie,  
Anne Lemière

21 nov. 12h – [festivaldesidees.paris](http://festivaldesidees.paris)



**Fe<sup>st</sup>ival des idées  
Paris**


**Quelle place pour les  
sciences dans notre  
futur ? Les lycéens  
répondent !**

Matteo Barsuglia  
Laure Bazire  
Giulia Vannoni  
&  
Les classes de Terminale du Lycée  
Internationale de Saint-Germain-en-Laye et  
du Lycée Plaine de Neauphle de Trappes





# Women Exploring the Limits



PCCP action  
Women Exploring the Limits (WEL)  
PATHS AROUND GALAXIES AND PARTICLES

Thursday February 11<sup>th</sup> 15.00 – 16.00  
Live on Zoom

UNESCO International Day of Women and Girls in Science 2021



An info their

Info and <https://indico.in2p3.fr>



Mardi 11 mai 2021, 15h00 – 16h00  
En direct sur Zoom

Quel est le rapport entre la détection des ondes gravitationnelles émises pendant la fusion des trous noirs et la mécanique quantique ?



Paris Centre for Cosmological Physics  
**Planning gender equality actions**

The Paris Centre for cosmological Physics (PCCP) is active in outreach and dissemination activities. During 2020, the PCCP will also pursue gender equality actions.

Register at: <https://indico.in2p3.fr/event/20110/>

**Program**

Date: 16th December 2019 Location: Amphitheater Pierre Gilles de Gennes

Morning session: Open to anyone who wishes to know more about gender equality actions in physics and PCCP activities.

Afternoon session: We welcome anybody willing to collaborate with 2020 PCCP gender equality activities.

- 09.30-10.00: Welcome with coffee
- 10.00-10.10: Introduction
- 10.10-10.50: L. D'Alessandro (Cancer Research Center Heidelberg - Equality and Diversity officer)
- 10.50-11.30: C. Hermann (École Polytechnique, Association Femmes & Sciences and European Platform of Women Scientists EPWS)
- 11.30-11.50: Coffee break
- 11.50-12.30: A. Tonazzo (Astroparticule et cosmologie, French responsible GENERA project)
- 12.30-12.50: M. Barsuglia (Paris Centre for cosmological physics)
- 12.50-14.15: Lunch
- 14.15-15.45: Round table
- 15.45-16.00: Coffee break
- 16.00-17.00: Round table






# Starlab @ Hôpital Robert Debré



# Café Diversité



# The PCCP

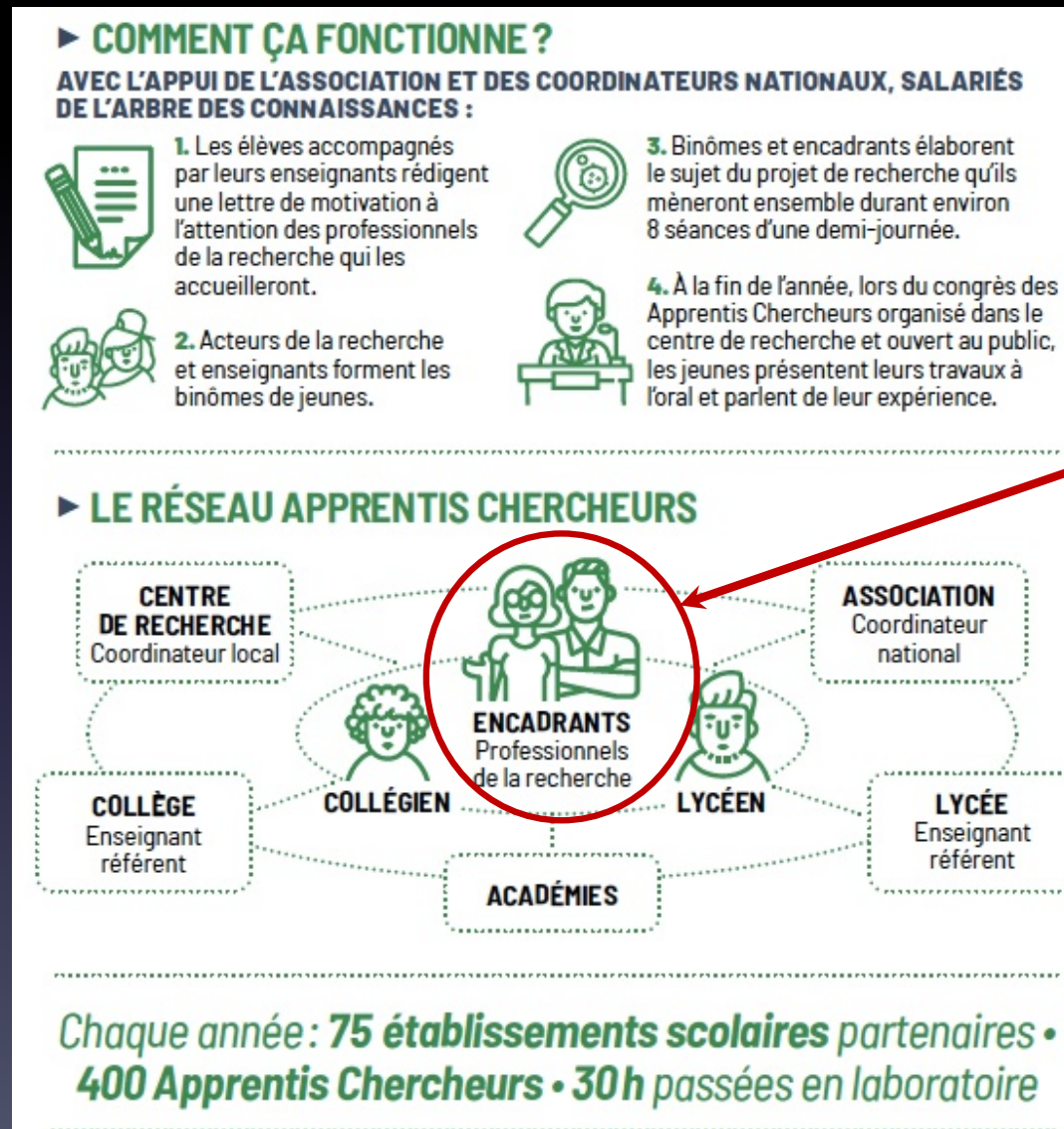
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# Apprentis Chercheurs

Education project started in 2004 by « L'arbre des connaissances » in collaboration with Universities and schools all over France



We are looking for one tutor (in collaboration with a more senior researcher?)

# Apprentis Chercheurs

## Becoming a tutor, why?

- To foster young people's interest in science, help develop their critical thinking and contribute creating scientific-literate, independent-thinking citizens.
- To help connect research with society in our local environment.
- For the fulfilment of creating personal and professional connections with the students and your colleagues at Université Paris Cité.
- To get trained in science outreach.

## What you have to do:

- Come up with a project for the two students (some help from more senior staff...).
- Tutor the two students for 8 half-days in the course of the Academic year.

## Benefits:

- Tutoring hours will be credited by your Doctorate School!!
- You will be offered a full training day in scientific outreach by L'Arbre des Connaissances.

# Get involved with PCCP!

Plenty of projects where you can contribute and train in outreach:

- *Le cosmos dans mon école* – participate in a single-event 2-h workshop in high-schools. Practice your public speaking while giving back to the youngest.
- *Starlab* – come play with science and create a fun learning moment for hospitalised children at the pediatric hospital Robert Debré. Single event, 1.5 h.
- *F3: Filles et Femmes aux Frontières de l'Univers* - if you are a young female researcher starting her career, come mentor high-school students and give them positive reference models in science. 1 week project, 3 times 3 h (in April).

Also...

- Participate to our monthly *Diversity Coffee*. Come listen, share or suggest new literature
- Contribute to the *Outreach Centre* by volunteering some time or ideas for improvement

...you'll thank us when you write your first Marie Curie (or ANR, or ERC...)! 😊



# Contacts

## Giulia Vannoni

- Email: [vannoni@apc.in2p3.fr](mailto:vannoni@apc.in2p3.fr)
- Office: 479A, 4<sup>th</sup> floor.
- Phone: 01 57 27 70 89