A story of a freezing project!

Or how to build a crazy huge project not only about the content ;)

Hihi Jean-Daniel
According to you, what’s the most important elements to make a SUPER STEM collaborative project?

- Organisation
- Creativity
- Money
- Open mindset
- Audience
- Adaptations
- Good colleagues
- Materials
- Luck
- Knowledges
- Ideas
- Institutional support
- Communications, etc…
According to you, what’s the most important elements to make a SUPER STEM collaborative project?
Sometimes it works, sometimes, not.
Keep a fruitfully ground, harvest satisfaction
And preserve an everyday in shape mindset!
« Hi Annabelle it’s Guillaume Lecointre, what’s up? We are going to Antarctica for the zoology campaigns with the REVOLTA team. IPEV proposes each year few places to go to DDU for “non-scientist people, usually journalists and draftmen. Why not a trainer-teacher? »
But first: Finding people and convince

And DDU Research Program Director ...
**Goal:** To gather educational and research professionals on the long run through fieldwork of scientific and technical research

**Who:** teachers, pedagogic trainers, scientists, technicians, science popularizers. To the benefit of schoolchildren.

**How:** embark to Antarctica 1 & 2, a two-years and a one-year training track for teachers to build and perform pedagogic projects

**What:** scientific, technical, logistic, human aspects of activities in an Antarctic station, Dumont D'Urville (DDU)

_A learning community_
Goals for teachers and schoolchildren?

- To know how science proceeds practically in the field under every facet and dimension
- To understand better how knowledge is constructed, especially the one that is taught
- To make sense from what is learnt: root knowledge into concrete things and facts
- To stimulate vocations among schoolchildren
- To allow schoolchildren understand how a scientific problem is solved
- To have fun through interdisciplinary and inter-professional working teams
Benefits for scientists?: reflexivity

To show how science works involves basics in epistemology. Questions to scientists on the field:

1. Are there aspects of your fieldwork that must stay secret?
2. If yes, when these secrets are revealed?
3. What are the hypotheses you’re testing? How many alternative hypotheses?
4. How many foreign colleagues ask the same scientific questions as yours?
5. Could those colleagues find different answers? If yes, why?
6. Have you ever seen colleagues being superstitious in their fieldwork?
7. Are you explaining phenomena by supernatural forces? Providential intervention?
8. Is it allowed to commit logical flaws, or to be irrational in the fieldwork?
9. Do you believe in scientific genius? Can one practice science lonely?
Benefits for scientists?: politics

- **First circle:** To draw attention of the public to the **collective** aspect of validation of scientific knowledge and to the **cognitive expectations** in the scientific work.

- **Second circle:** To draw attention of the public to the **diversity of jobs** and professional skills that contribute to science.

- **Third circle:** To draw attention to the diversity of jobs allows to put aware and appropriate limits to «citizen science». 
Pre-mission: Concarneau first contact between teachers and researchers

3 days immersion in July 2016 in a pre-polar campaign in marine biology station in Brittany (Concarneau)

18 Teachers of Alsace and Brittany

15 researchers and technicians of France, Italy, Tasmania and Australia

Objectives: To have the opportunity to participate in a scientific workshop dedicated to the taxonomy and systematics of the Antarctic benthic fauna. 3 days to immerse with researchers and to learn valuable lessons about the real workings of research. An collaborative experience to share, later, with students

Secondary objectives:
The researchers also learn from the teachers! To enjoy informal moments around research. To know more about how to prepare a polar research mission in biology field
A human adventure, toward a travel log

DEPARTURE JANUARY, 4, 2017.

- Strasbourg - Paris
  CDG Départ
  4/01/2017 - Paris CDG
  21:35 Arrivée
  7:20 Dubai (J+1)

- Départ 5/01/17
  Dubai 9:35
  Arrivée 6:30
  Sydney (J+1)

- Départ 6/01/17
  Sydney 10:35
  Arrivée 12:30
  Hobart
Life on Astrolabe
"I'm sick today, the boat is moving a lot, it's hard for me to write there, the objects are waltzing, the doors are slamming, and we're banging frequently." Last night my bed was starboard. - first, parallel to the direction of movement of the boat which does not help things! In the middle of the night, around 00:30, I decided to climb on the bunk located above one of my two roommates of The cabin is better oriented, I took a few bruises, everything becomes extremely acrobatic.I still managed to take a shower.It is necessary to learn not to resist the movements of the boat but to follow them. lunch was difficult, nausea wins me again, I went to get some fresh air on the bridge, I had to hang in there, I was able to take pictures of the shy albatross and the sooty puffin. go back to bed ... See you soon!
Annabelle » 9/01/2017
Finally arrived @Dumont D’Urville !
So Annabelle, what did you do here?
So Annabelle, what did you do here?

- Collection of meteorological data (temperature, pressure, wind, humidity, sunshine ... dropped probe balloons).
- Collection of processed data from the LIDAR and the SAOZ spectrometer on ozone and stratospheric fine particles.
- Monitoring of logger poses on penguins (physiological data) and approach of adaptation mechanisms to climate change.
- Collection of data from the seismology and magnetism observatory: the reception, processing and analysis of data.
- Follow-up glaciologists' work on the Astrolabe glacier: retrieve information in the ice that allows us to propose a climatic model and understand how coastal glaciers contribute to sea level rise.
- Feed a travel log: scientific, human, technical and logistical aspects of life on the base.
- Interview researchers, technicians and other essential jobs on the base like baker, cook, etc.
- Writing and sending resources for classes.
Communication!

Datas and resources for classrooms on DevPro (for teachers) / Travel Log (public) / Museum site web (public and researchers) / Photos / videos / Social medias feed
Discover a living and embodied science
To introduce students to the importance of the jobs of the polar base
• interviews and job descriptions

#AntarcticaLive!
the Big live with the 500 french pupils

"Collective and humanity is something very powerful"
After experience: exploit the results in training (embark to Antarctica 1 (2015-2017) and 2 (2017-2018))

- Books
- Ressources for classroom, teachers, medias
- Long and short terms trainings with teachers and events during school holidays
- Accompaniment of teaching teams for project construction on this theme: for each project, at least 1 scientific tutor + 1 pedagogic tutor
- Outputs and dissimination for researchers: http://expeditions-antarctiques.mnhn.fr/fr/volet-pedagogique/revolta-embarquez-antarctique
Embark to Antarctica

1 & 2

- 75 teachers trained
  Participation of 65 classrooms > 1800 pupils

- 70 hours of training through direct contact with research

- Direct DDU-France
  40 minutes
  500 pupils

- 450 pages written at DDU

- > 20 different year pedagogic interdisciplinary projects built

- 9 scientific programs surveyed
  + technical and logistic aspects

- 36 000 people on twitter
- 12 000 people on Facebook

- > 20 different year pedagogic interdisciplinary projects built

- 36 000 people on twitter
- 12 000 people on Facebook