



FRONTIERS

BRINGING NOBEL PRIZE PHYSICS TO THE CLASSROOM

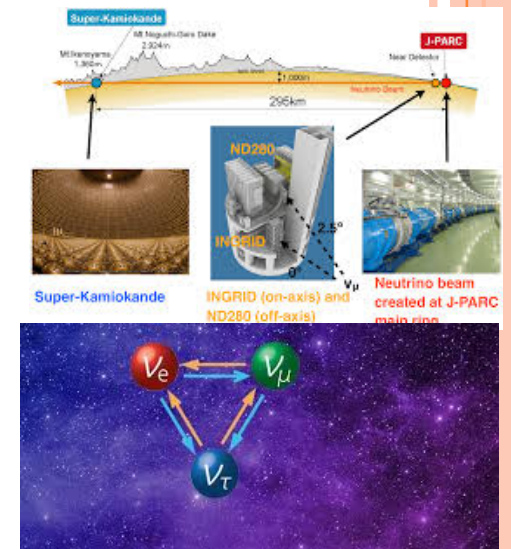
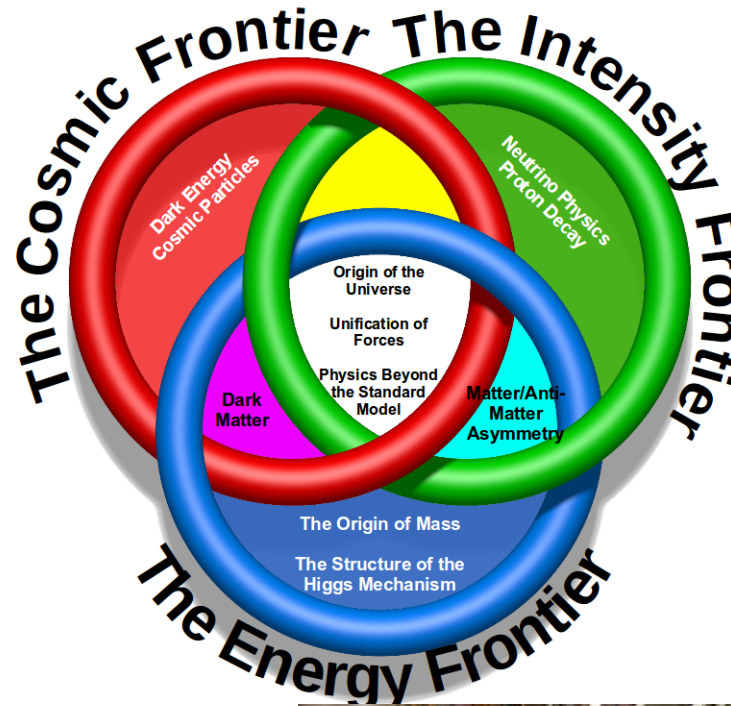
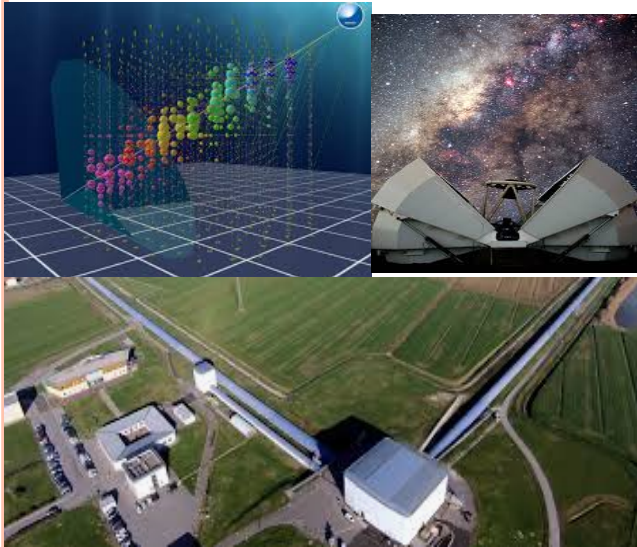
**Emmanuel Chaniotakis,
Research and Development Department,
Ellinogermaniki Agogi,
Greece**

FRONTIERS Visionary Workshop: Paris, 30-11- 2019

www.frontiers-project.eu



FRONTIERS IN FUNDAMENTAL SCIENCE RESEARCH



Frontiers has been funded within the framework of the European Union Erasmus+ programme

GAME CHANGING SCIENTIFIC DISCOVERIES WITH GREAT MEDIA COVERAGE



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GAME CHANGING SCIENTIFIC DISCOVERIES WITH GREAT MEDIA COVERAGE

Physics 2013

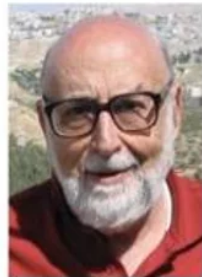
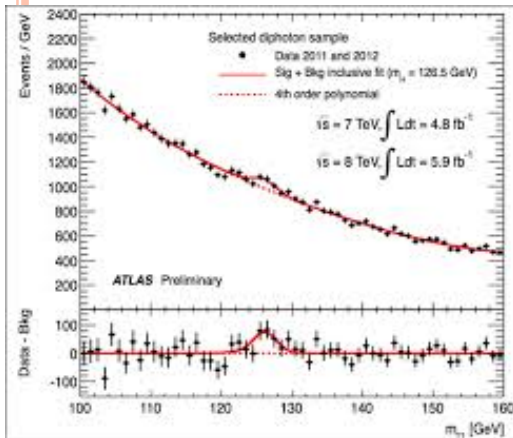


Photo: Pnicolet via
Wikimedia Commons
François Englert

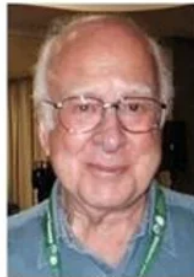
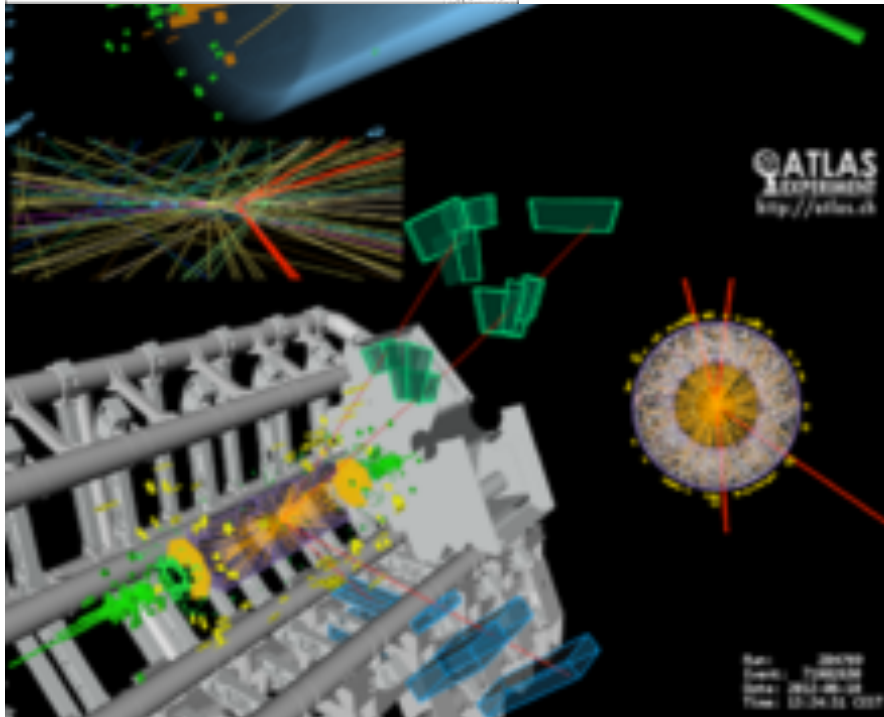


Photo: G-M Greuel
via Wikimedia
Commons
Peter W. Higgs



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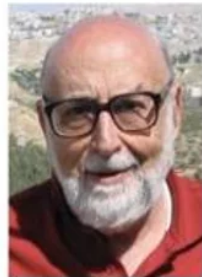
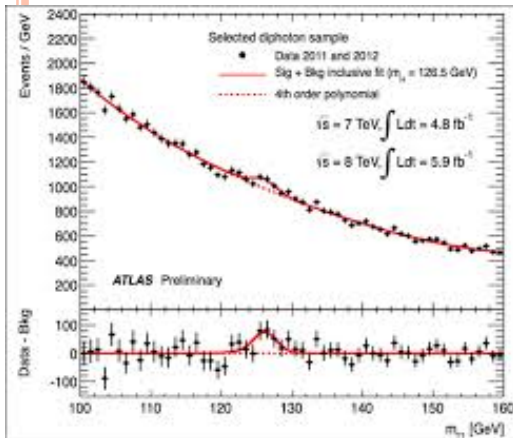
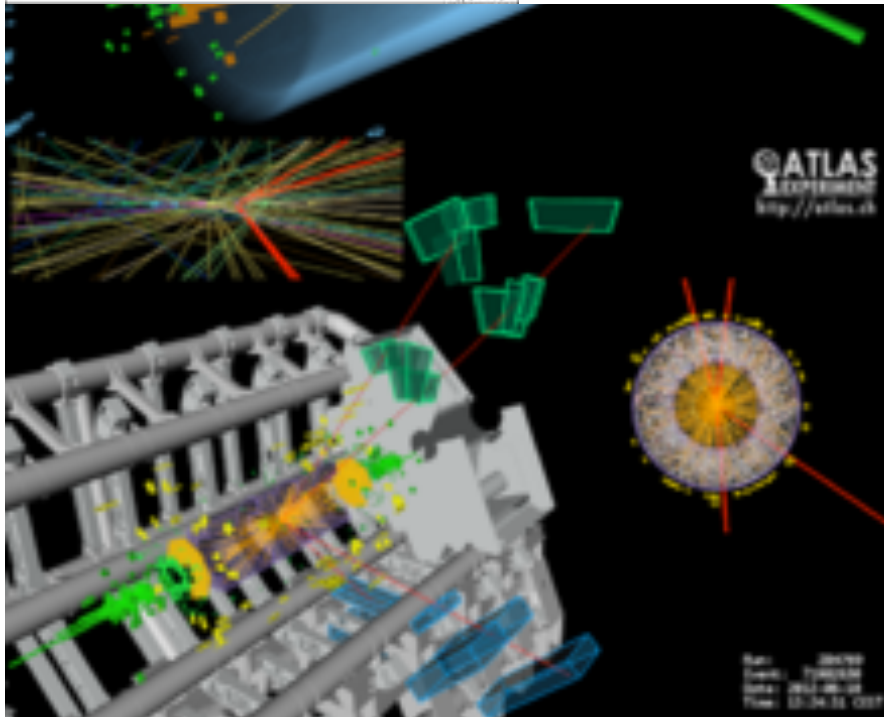


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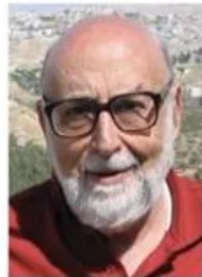
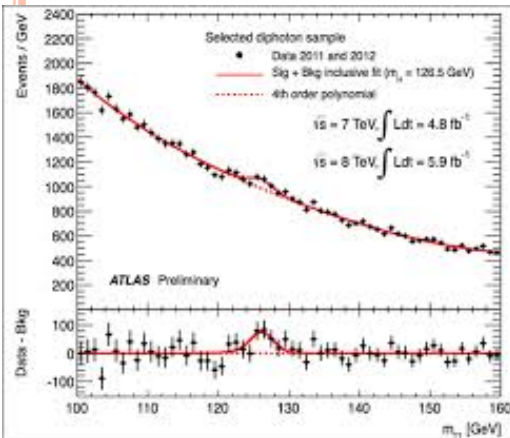
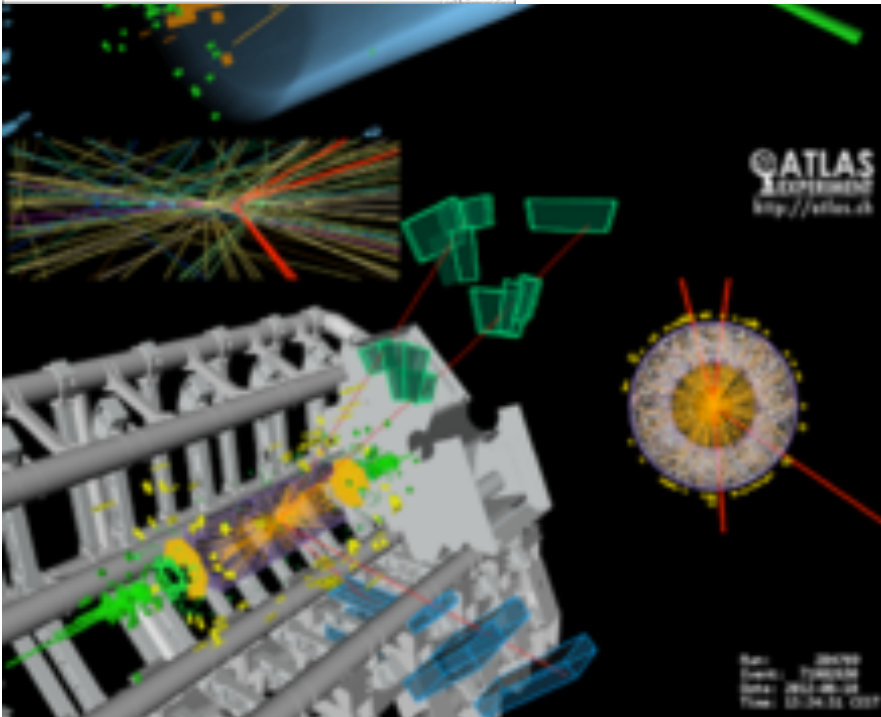
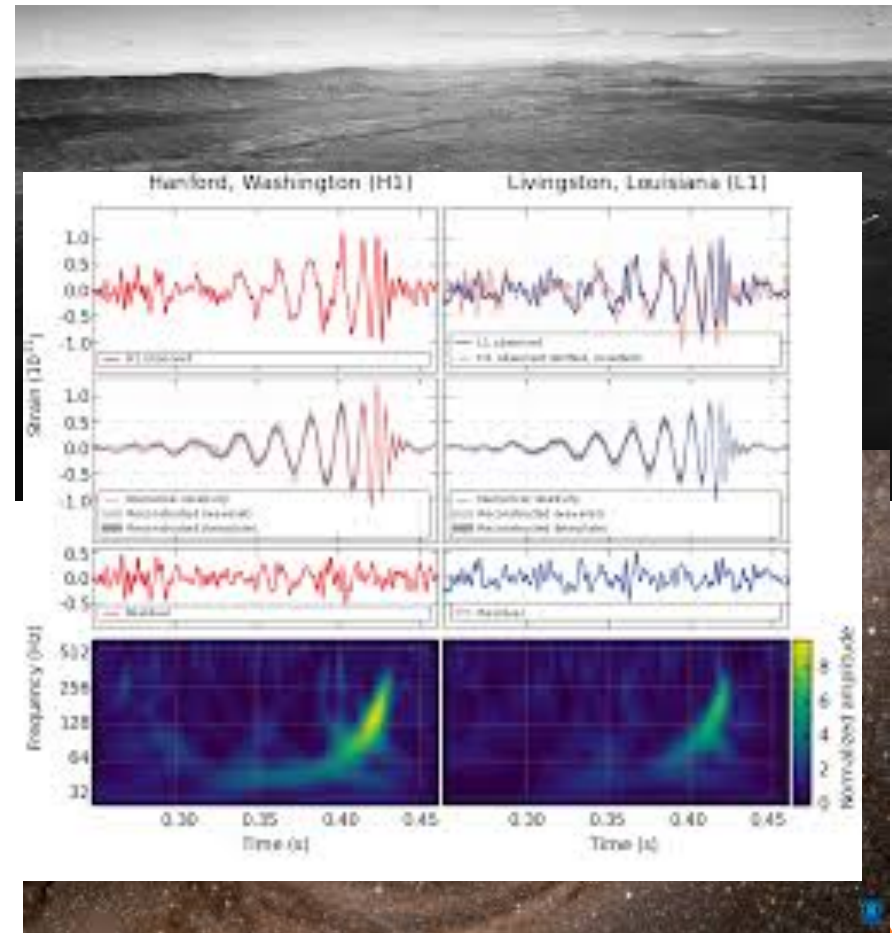


Photo: Pnicolet via Wikimedia Commons
François Englert



Photo: G-M Greuel via Wikimedia Commons
Peter W. Higgs



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AND UNPRECEDENTED IMPACT IN HUMANKIND



Frontiers has been funded within the framework of the European Union Erasmus+ programme



AND UNPRECEDENTED IMPACT IN HUMANKIND

**The Impacts of Large Research Infrastructures
on
Economic Innovation and on Society:**

Case Studies at CERN



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The World Wide Web



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The Impacts of Large Research Infrastructures
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The World Wide Web



Proton therapy



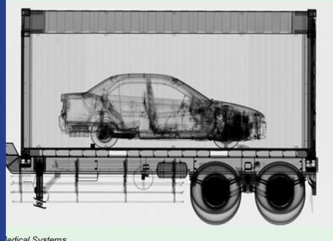
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AND UNPRECEDENTED IMPACT IN HUMANKIND

The Impacts of Large Research Infrastructures
on
Economic Innovation and on Society

Accelerators for National Security



More than two billion tons of cargo pass through U.S. ports and waterways annually. Many ports now screen cargo for weapons or nuclear materials with gamma-ray scanners, based on radioactive isotopes such as cobalt-60. However, high-energy X-rays generated by particle accelerators can make this process faster, cheaper, and safer

24 PASI, March 2013 - S. Holmes/R. Kephart

Fermilab



The World Wide Web



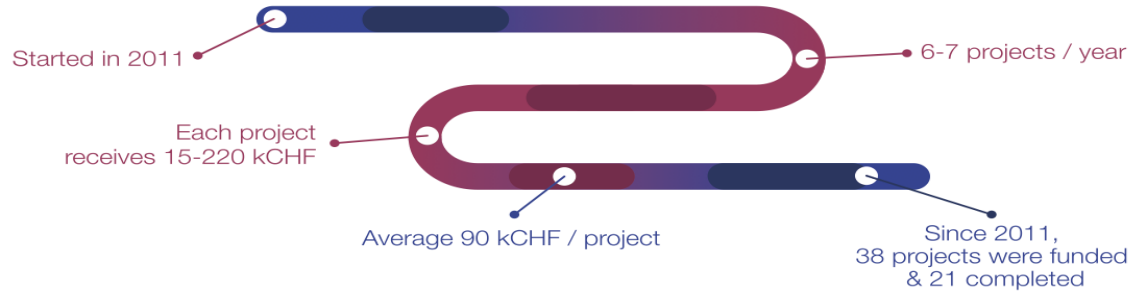
Proton therapy



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AND UNPRECEDENTED IMPACT IN HUMANKIND



ld Wide Web

The Impacts of Large R

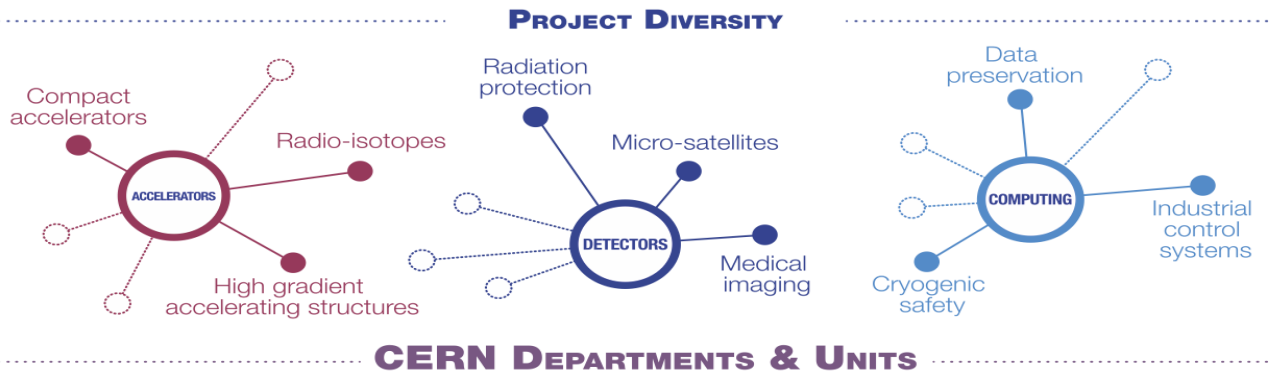
Economic Innovati

Accelerators fo



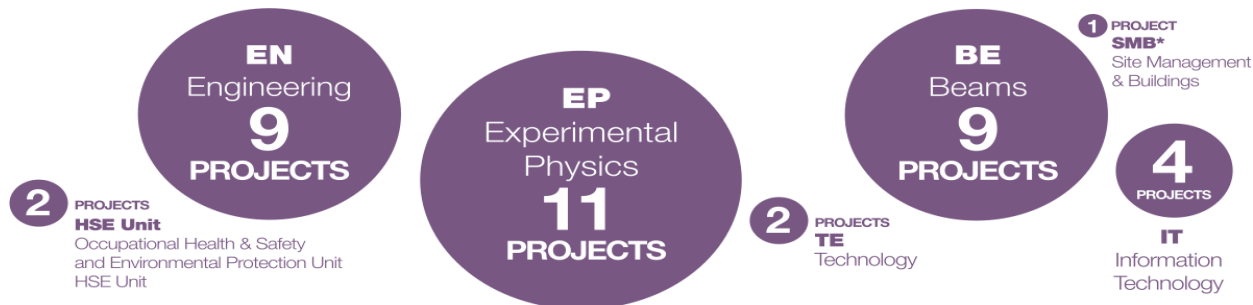
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24 PASI, March 2013 - S. Holmes/R. Kephart



therapy

CERN DEPARTMENTS & UNITS



* The SMB Department exists since 2016



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AND UNPRECEDENTED IMPACT IN HUMANITY

Started in 2011

6-7 projects / year

Each project
receives 15-220 kCHF

World Wide Web

The

A



More than
waterway
nuclear
isotopes
particle ac

24 PASI, March

My goal is simple: It is a complete
understanding of the universe, why
it is as it is and why it exists at all.

therapy



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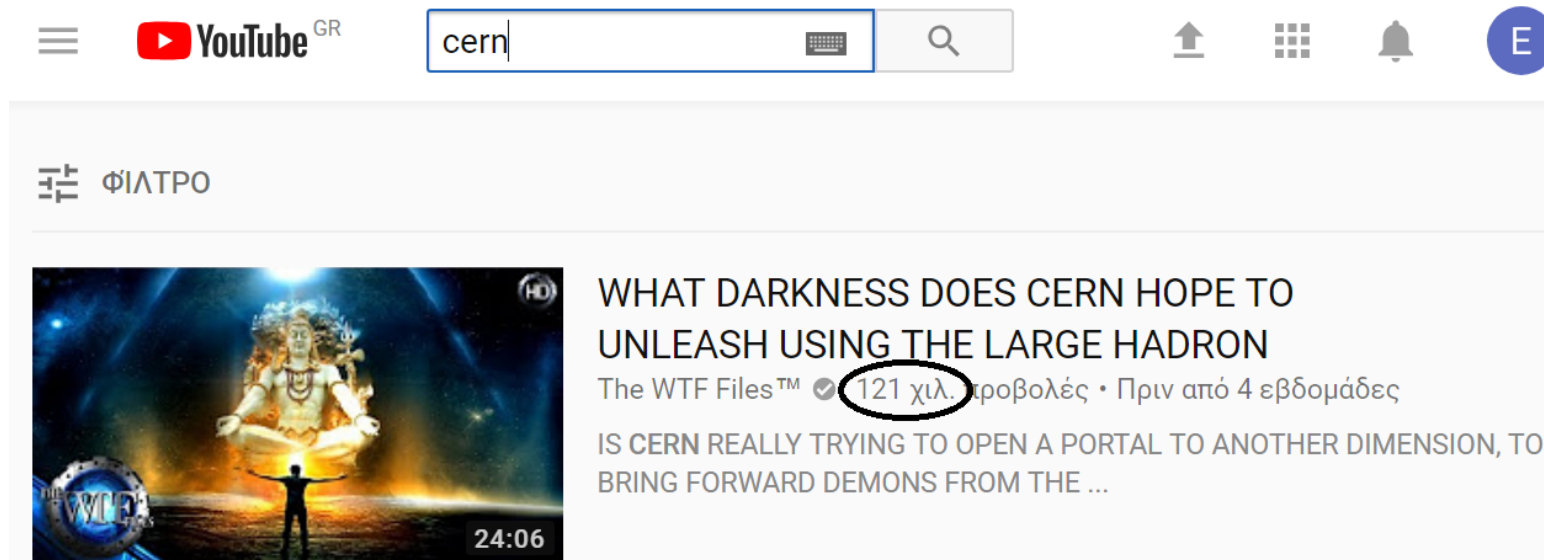
YET.. IF YOU SEARCH CERN ON YOUTUBE



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YET.. IF YOU SEARCH CERN ON YOUTUBE



The screenshot shows the YouTube interface with the search bar containing the text 'cern'. Below the search bar, the video results are displayed. The first result is from the channel 'ΦΙΑΤΡΟ' (FIATRO). The video title is 'WHAT DARKNESS DOES CERN HOPE TO UNLEASH USING THE LARGE HADRON'. The channel name is 'The WTF Files™' with a verified badge and a subscriber count of '121 χιλ.' (121 thousand), which is circled in red. The video description reads: 'IS CERN REALLY TRYING TO OPEN A PORTAL TO ANOTHER DIMENSION, TO BRING FORWARD DEMONS FROM THE ...'. The video thumbnail shows a glowing figure in a meditative pose against a dark, starry background. The video duration is 24:06.



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YET.. IF YOU SEARCH CERN ON YOUTUBE

The image shows a screenshot of a YouTube search for 'cern'. The search results page displays a video titled 'CERN Scientists Won't Tell You This!' by the channel 'SCIENCE NEWS'. The video has 273,478 views, 4.1 million likes, and 605 comments. The video player shows a thumbnail with the text 'Revamped collider to shine brighter light on physics mysteries at CERN' and a duration of 0:23 / 16:13. The video title 'CERN Scientists Won't Tell You This!' is circled in red. The video player interface includes a progress bar, play/pause button, volume control, and settings icons.



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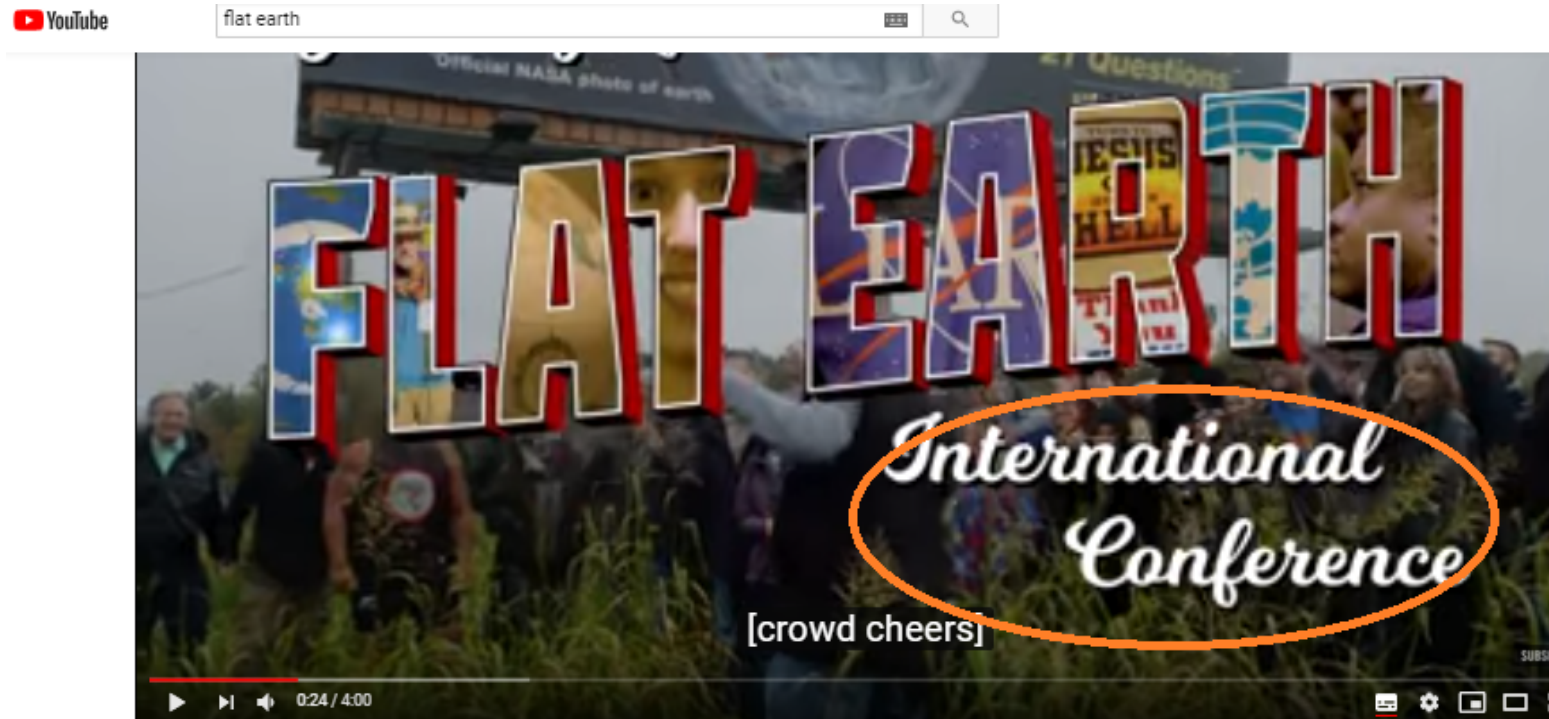
YET.. IF YOU SEARCH CERN ON YOUTUBE

The image shows a screenshot of a YouTube search for 'cern'. The search results display a video titled "I'm a Physicist At CERN We've Done Something We Shouldn't Have Done part one" with 6,417,821 views. The video player shows a close-up of the CERN Large Hadron Collider (LHC) tunnel, with a golden figure of a centaur in the center. The video has a "NOW" badge in the bottom right corner. The video player controls show the video is at 8:08 / 18:10. The video title is "I'm a Physicist At CERN We've Done Something We Shouldn't Have Done part one". The view count is 6,417,821, which is circled in red. The video has 20,000 likes and 14,000 comments. The video is shared on social media. The video player controls show the video is at 8:08 / 18:10. The video has a "NOW" badge in the bottom right corner. The video player controls show the video is at 8:08 / 18:10. The video has a "NOW" badge in the bottom right corner.



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OR ..FLAT EARTH



RALEIGH
People From Around The Globe Met For The First Flat Earth Conference (HBO)

1.420.281 προβολές

13 ΧΙΛ. 5,2 ΧΙΛ. ΚΟΙΝΟΠΟΙΗΣΗ ΑΠΟΘΗΚΕΥΣΗ

VICE News
Δημοσιεύθηκε στις 28 Νοε 2017

ΕΓΓΡΑΦΗ 3,4 Ε

Conspiracy theories are nothing new, but in the age of the internet, they spread like "chemtrails" in the wind. The theory that the world is flat, for example, gained so much popularity online that this year 500 people gathered for the first ever International Flat Earth Conference.



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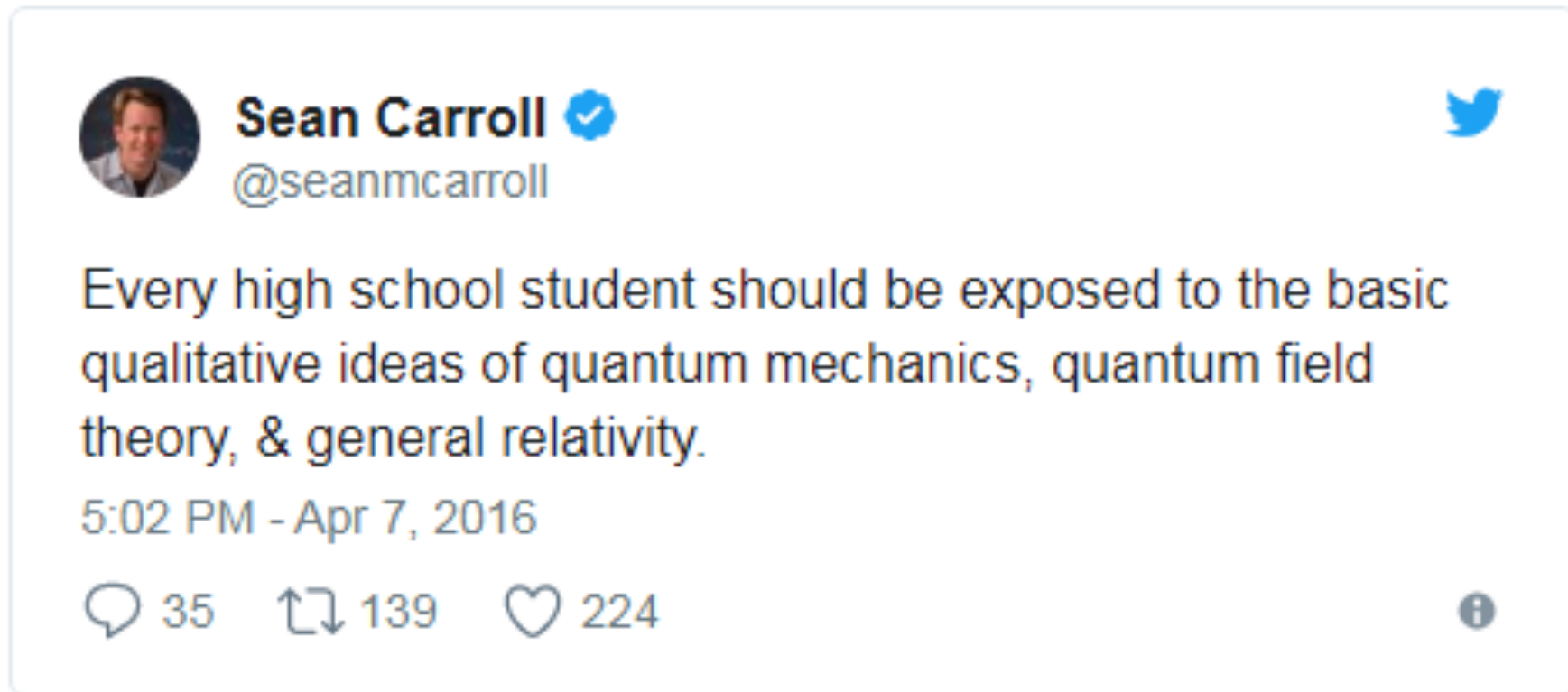
IT ALL STARTS FROM EDUCATION..



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IT ALL STARTS FROM EDUCATION..

20th Century Physics not
systematically integrated in K12
formal education!

theory, & general relativity.

5:02 PM - Apr 7, 2016

35 139 224



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IT ALL STARTS FROM EDUCATION..

20th Century Physics not
systematically integrated in K12
formal education!

theory & general relativity

Teachers don't feel confident to address students'
questions regarding newest discoveries in modern
science



sic



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MANY EDUCATION AND OUTREACH INITIATIVES, ESPECIALLY IN HEP AND ASTRONOMY



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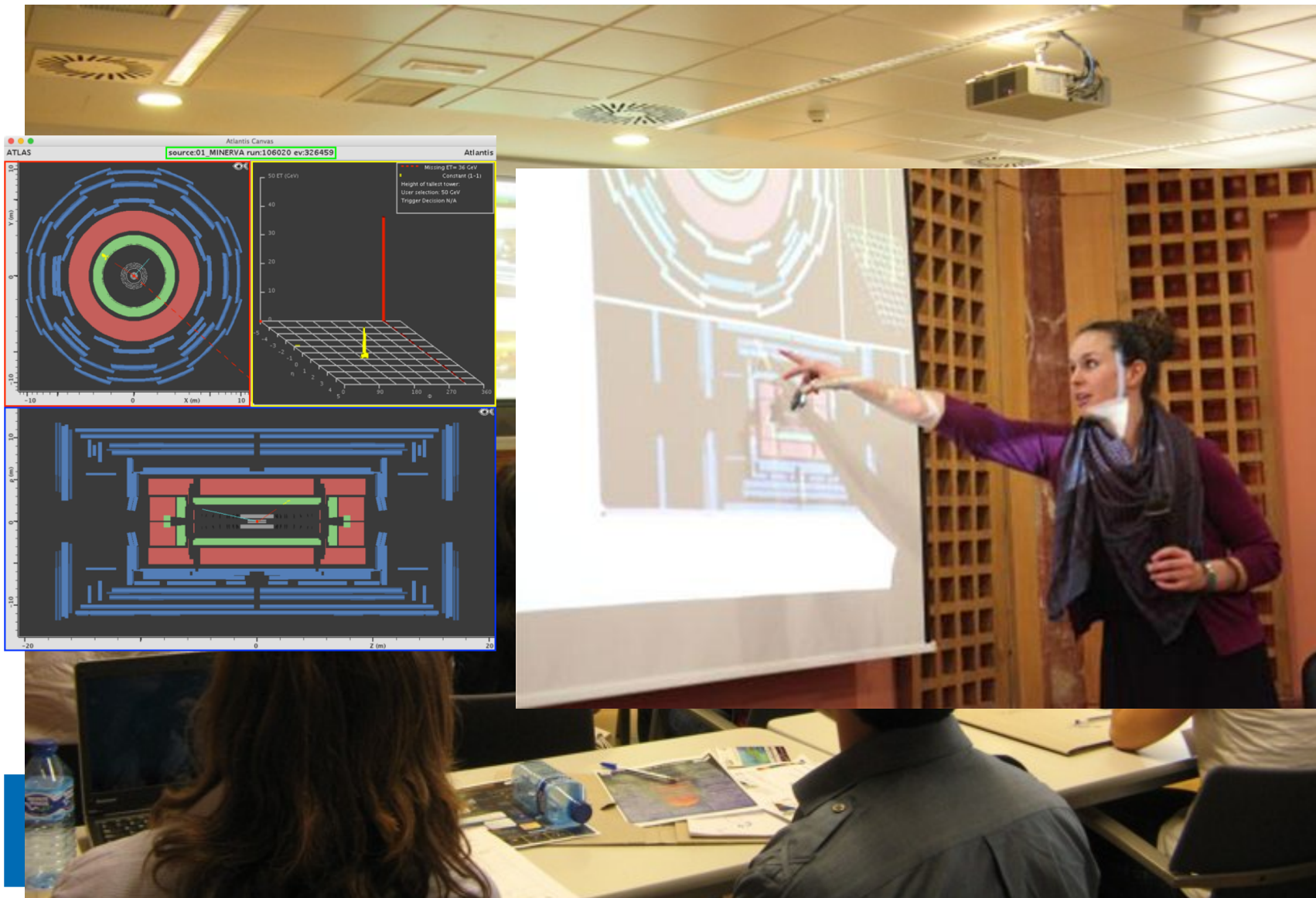


MANY EDUCATION AND OUTREACH INITIATIVES, ESPECIALLY IN HEP AND ASTRONOMY



asmus+

MANY EDUCATION AND OUTREACH INITIATIVES, ESPECIALLY IN HEP AND ASTRONOMY



WITH DOCUMENTED IMPACT

<https://arxiv.org/ftp/arxiv/papers/1801/18>



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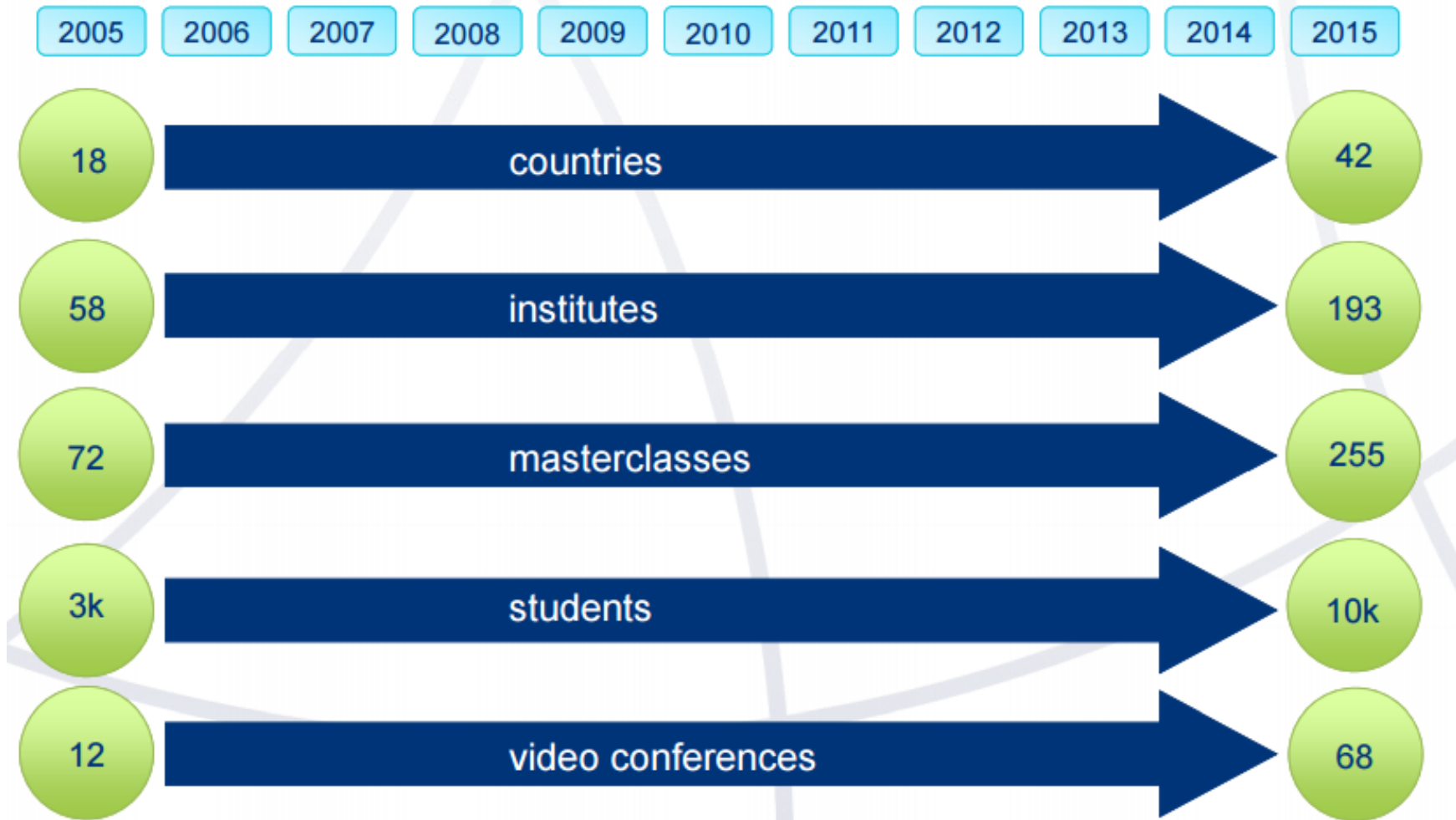


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WITH DOCUMENTED IMPACT



<https://arxiv.org/ftp/arxiv/papers/1801/18>



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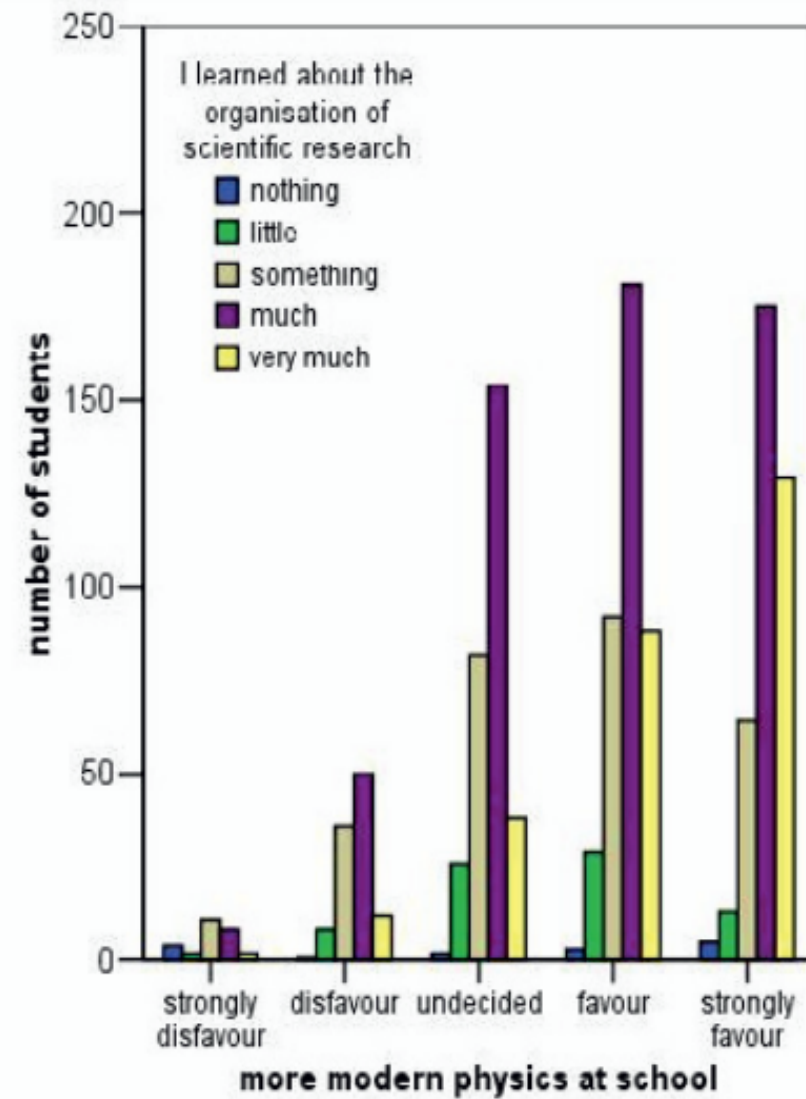
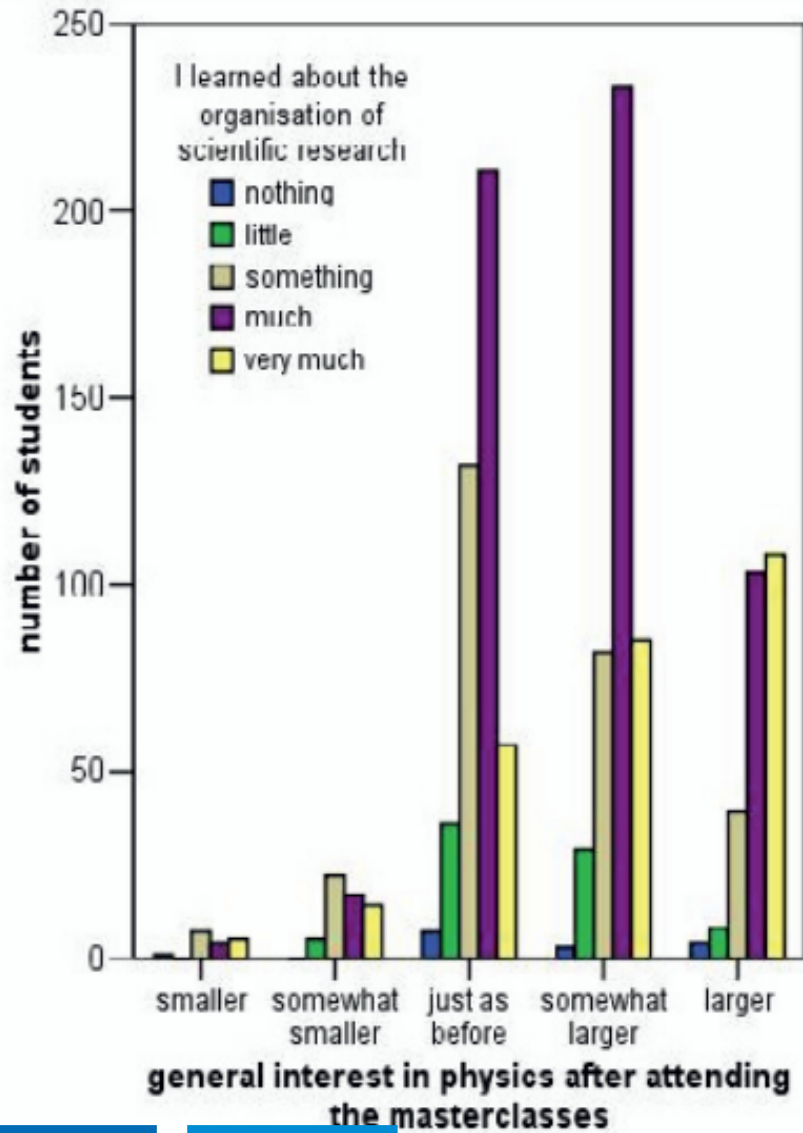
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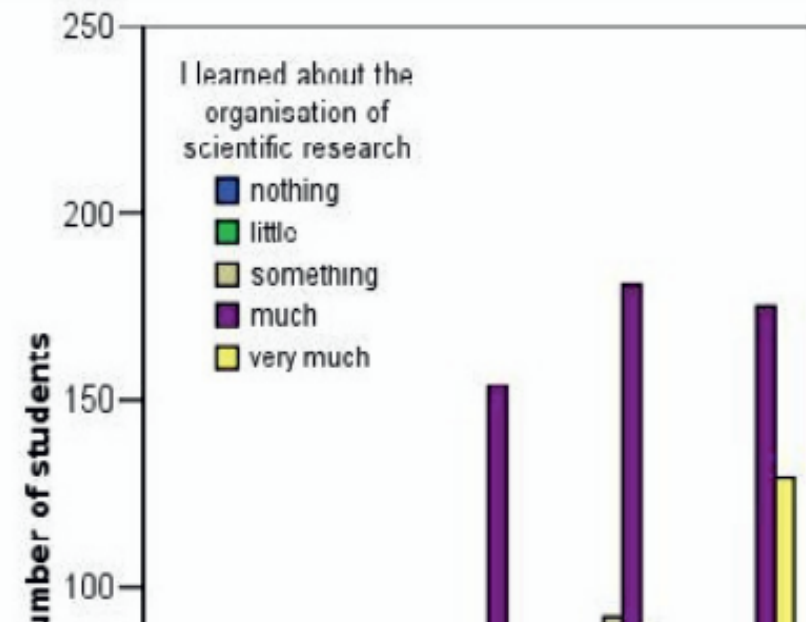
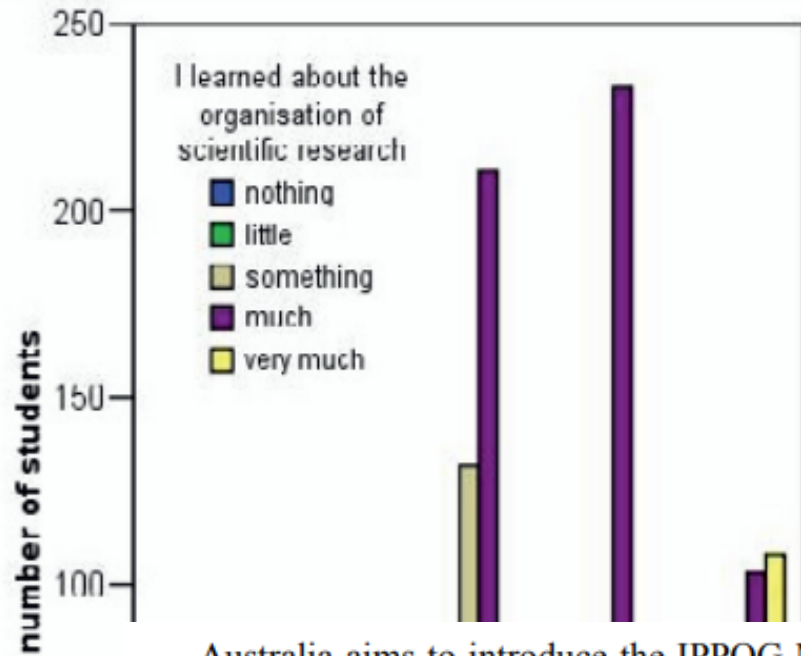


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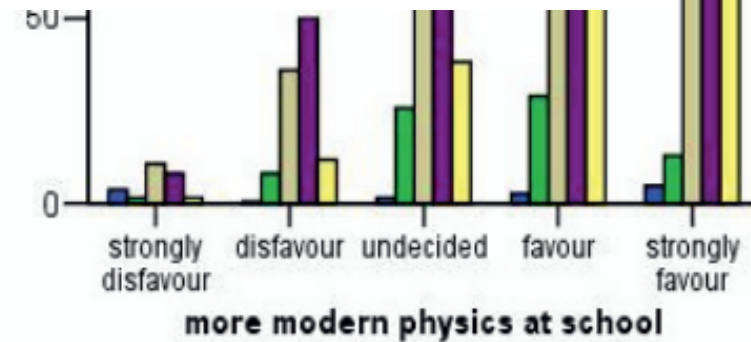
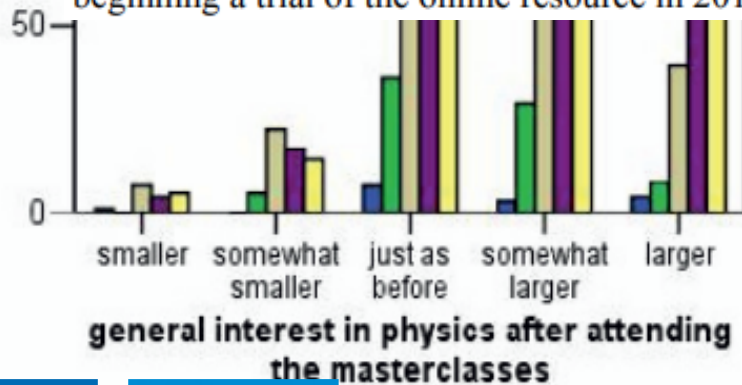


Union Erasmus+





Australia aims to introduce the IPPOG Masterclasses programme as part of their formal science education in high-schools in New South Wales. The NSW Dept. of Education is beginning a trial of the online resource in 2017.



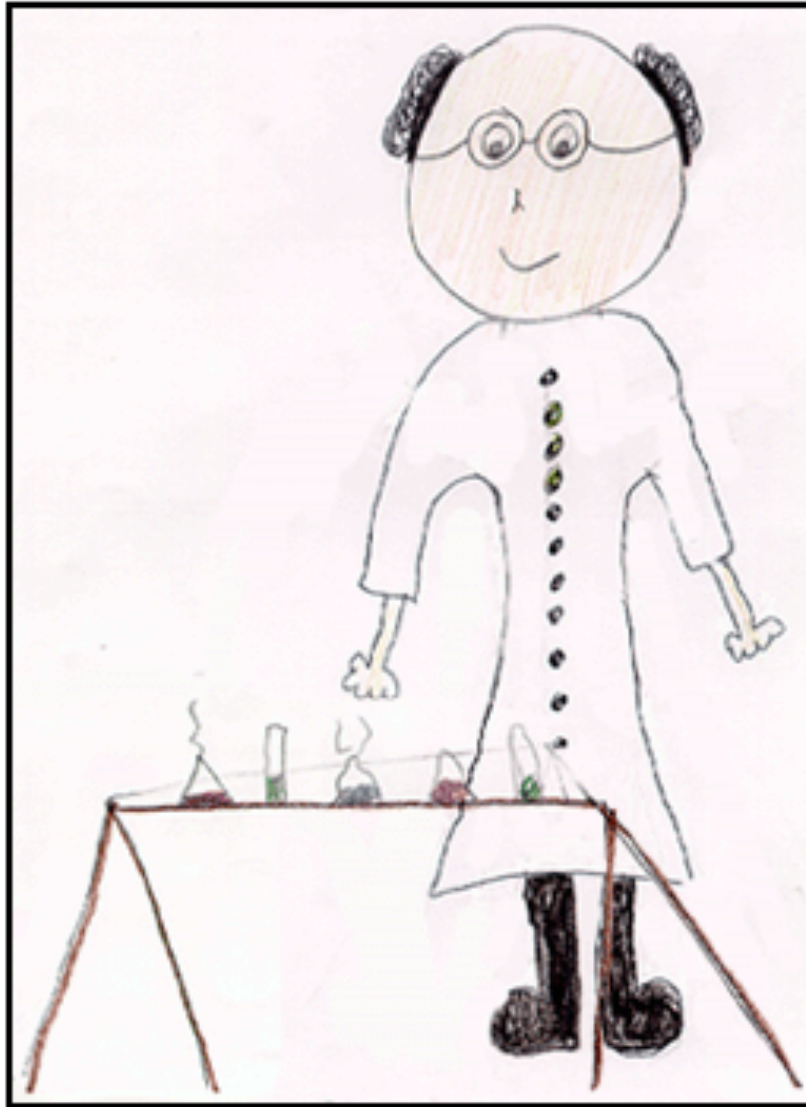
AND THE POTENTIAL TO CHANGE STUDENTS' VISION
OF SCIENCE AND SCIENTISTS..

WHAT DOES A SCIENTIST LOOK LIKE?

Student answers after a visit at Fermi National
Laboratory (Fermilab) in USA



BEFORE



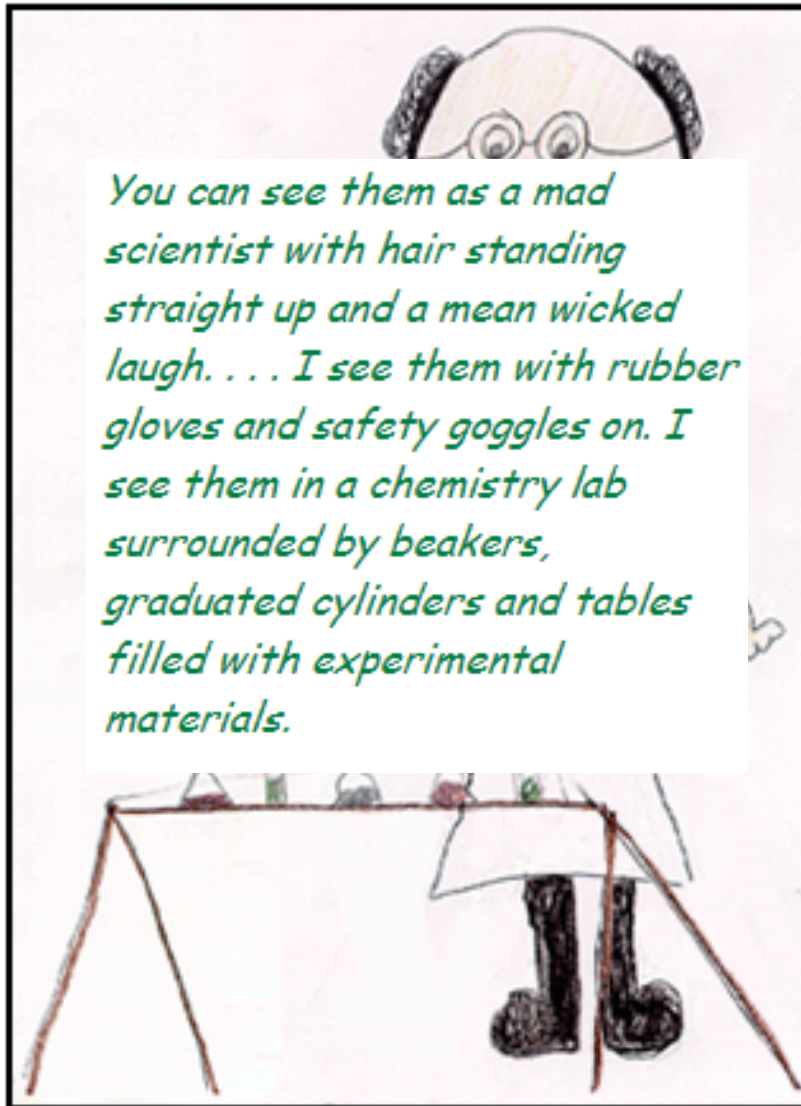
AFTER



E?



BEFORE



AFTER



E?



BEFORE



You can see them as a mad scientist with hair standing straight up and a mean wicked laugh. . . . I see them with rubber gloves and safety goggles on. I see them in a chemistry lab surrounded by beakers, graduated cylinders and tables filled with experimental materials.



AFTER



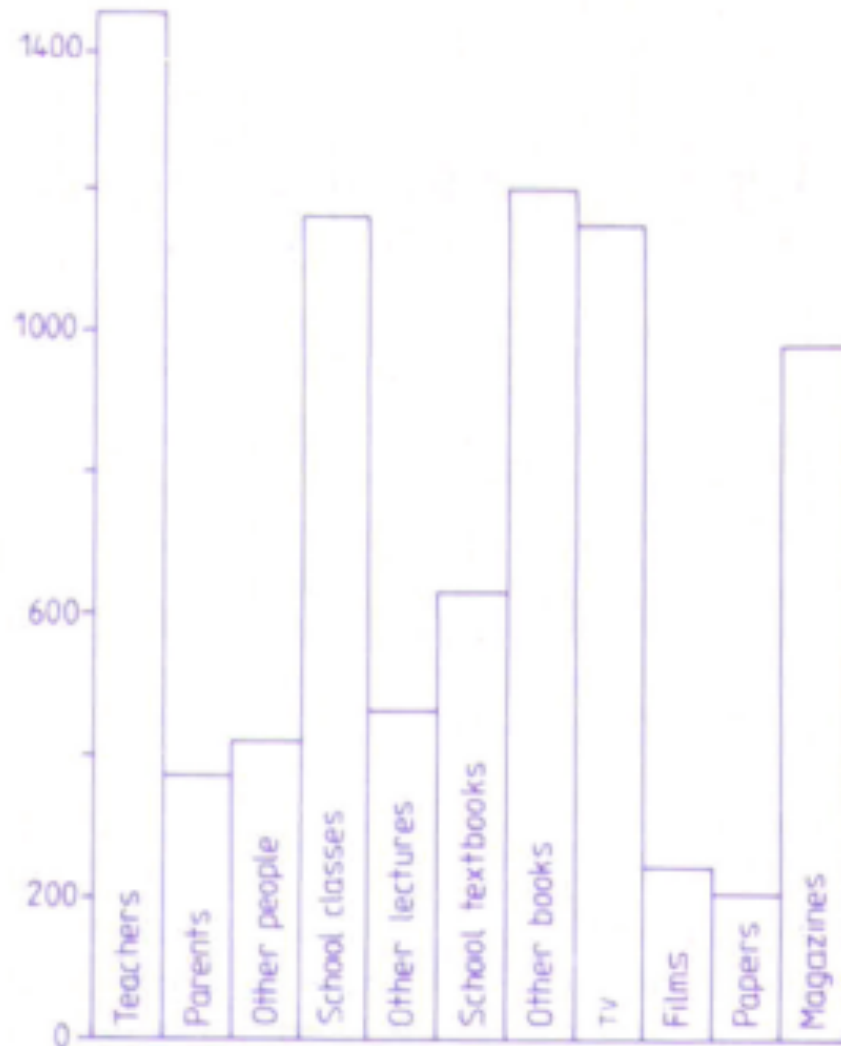
Scientists love their jobs. They wake up in the morning and are excited to come to work. . . . When you are a scientist, you come to work ready to explore and learn new things. Things that may change the world someday. Maybe not today, maybe not tomorrow.



E?



AS WELL AS POTENTIAL TO ATTRACT STUDENTS TO SCIENCE CAREERS

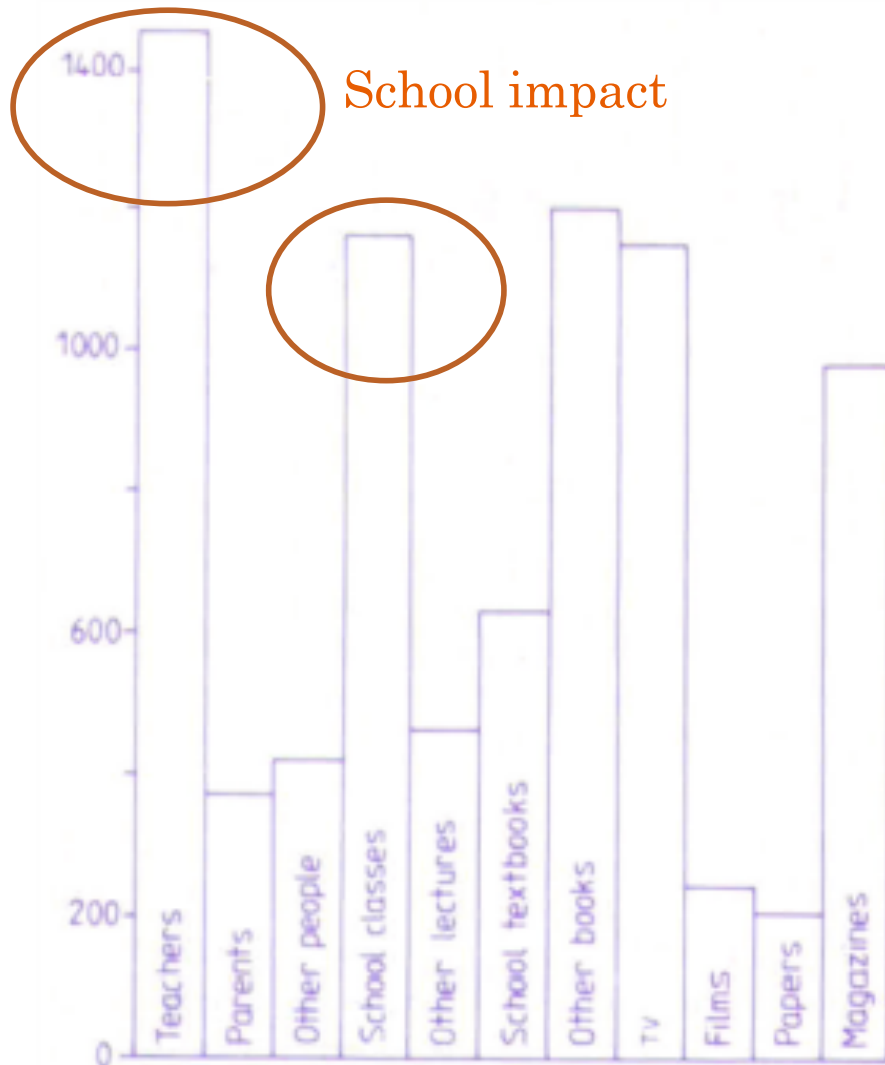


- Research on more than 2000 college students in Physics in UK.

Kalmus, P. I. P.
(1985). What attracts
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Physics Bulletin, 36(4),
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170. doi:10.1088/0031-
9112/36/4/029



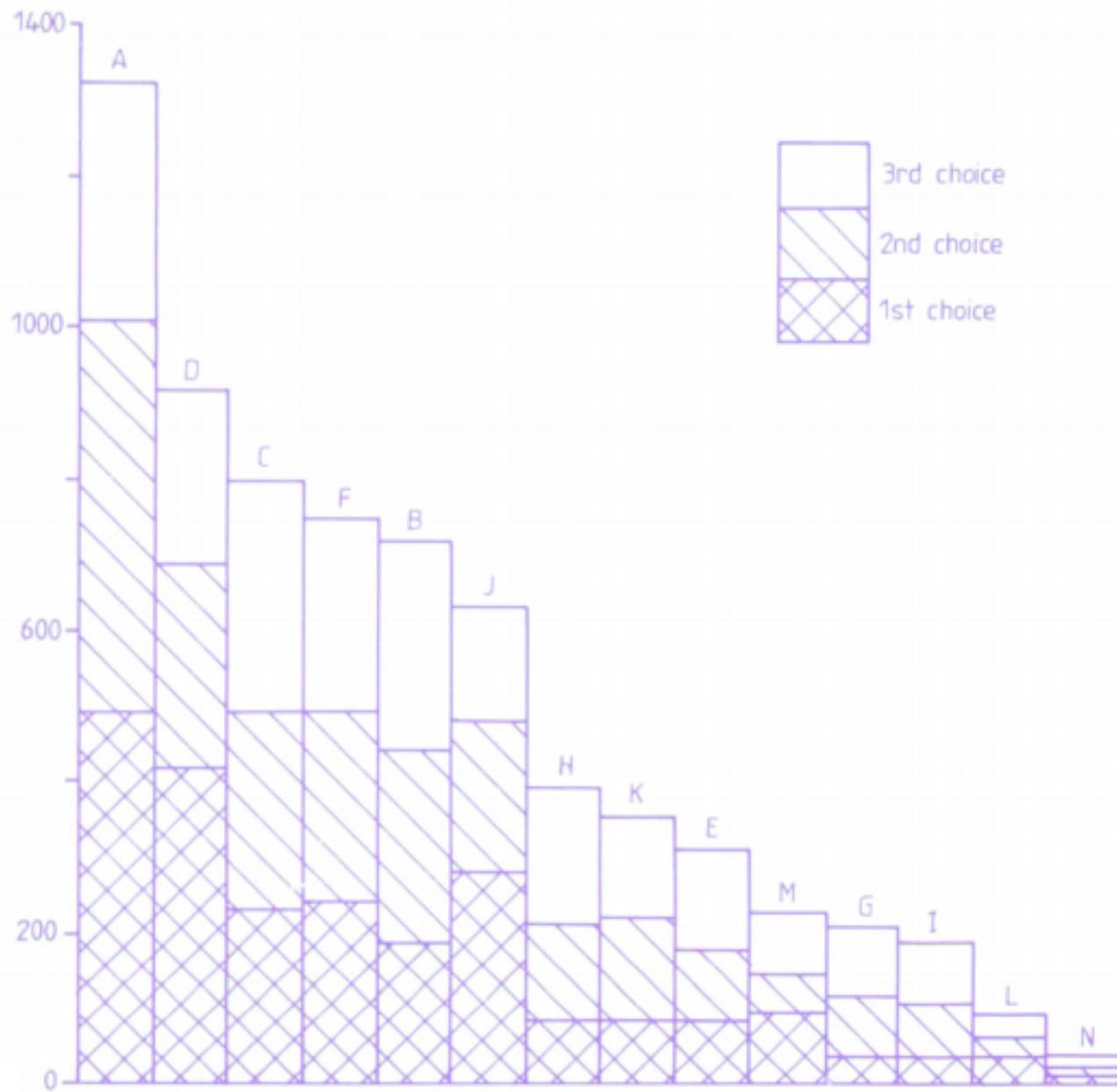
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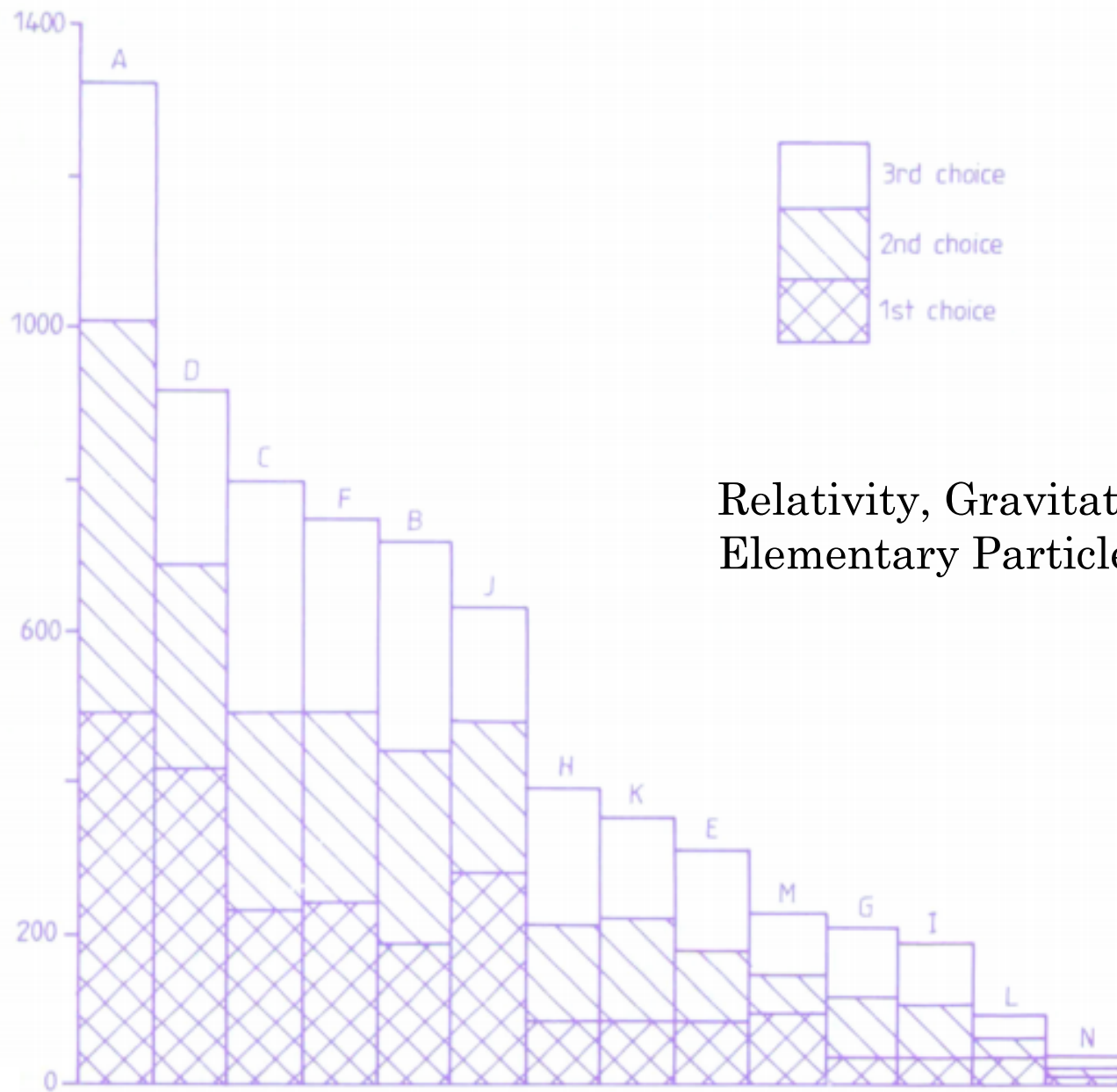
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- A Relativity and gravitation
- B Quantum theory, other theoretical physics
- C Elementary particles
- D Astronomy, astrophysics, cosmology, space research
- F The nucleus, nuclear energy
- H Optics
- I Atoms, molecules, chemical physics
- J Electronics
- K Computing



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- C Elementary particles
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Relativity, Gravitation, Astrophysics and Elementary Particles in students' top 5 list.

SOME TEACHER FEEDBACK

Feedback from teachers in Brazil who participated in HEP Masterclasses

“Materials for studying and teaching. The High School books do not cover these topics” (T14)

“There are too many topics to address and the time is very short.” (T4)

“Lack of time to cover an extensive curriculum. [...]” (T18)



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SOME TEACHER FEEDBACK

“... (I) had no idea of so many possibilities to address the content that will be worked with the students” (T1)

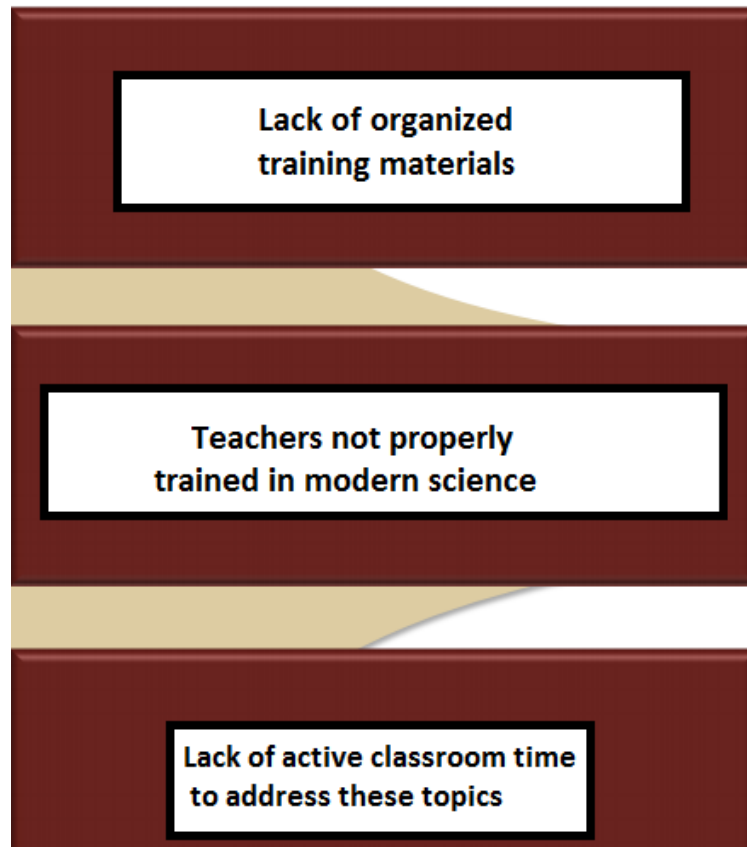
“I learned a lot; besides learning about particle physics, I also discovered new methods and instructional experiences from other teachers. Students get excited” (T17)

“[the workshop] approaches the teacher to the reality of current researches, providing the elements to contextualize [particle physics]” (T9)

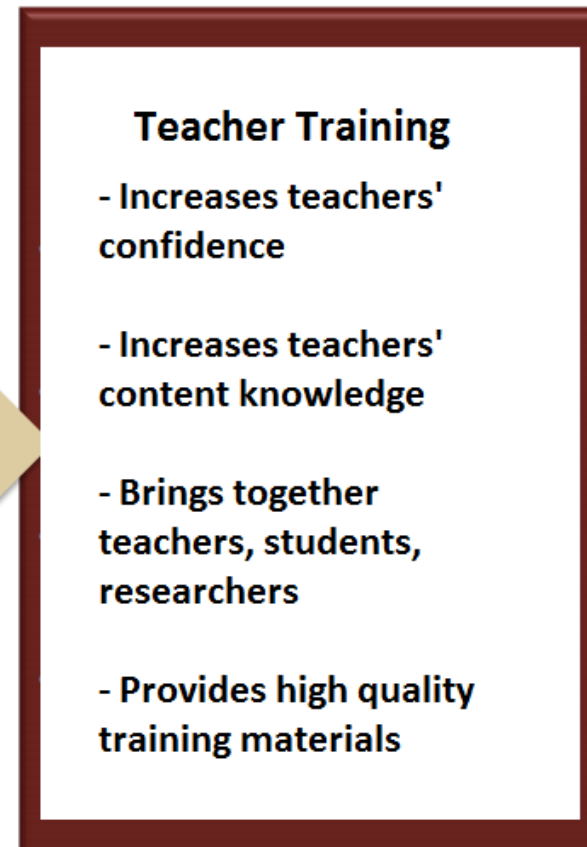


THE VALUE OF TEACHER TRAINING IN FRONTIER SCIENCE

Challenges



Solutions



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CHALLENGES AND PROBLEMS

- Lack of organized educational content introducing modern Physics in the classroom in a consistent fashion.
- Lack of teacher training in modern Physics topics.
- Lack of a pedagogical framework and methodology to introduce these topics in the classroom.
- Lack of feedback and systematic communication between educators – researchers as well as between educators with the same passion for introducing Modern Physics in their school.
- Lack of time and curriculum pressure for timely completion of the prescribed syllabus and preparation for exams.
- Lack of support from the state.



THE ROLE OF FRONTIER



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- FRONTIERS is a project funded by the Erasmus+ framework of the EU with duration from 2018 to 2021.



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THE ROLE OF FRONTIERS

- FRONTIERS is a project funded by the Erasmus+ framework of the EU with duration from 2018 to 2021.
- **It aims to address the challenges of introducing frontier Physics in the Classroom.**



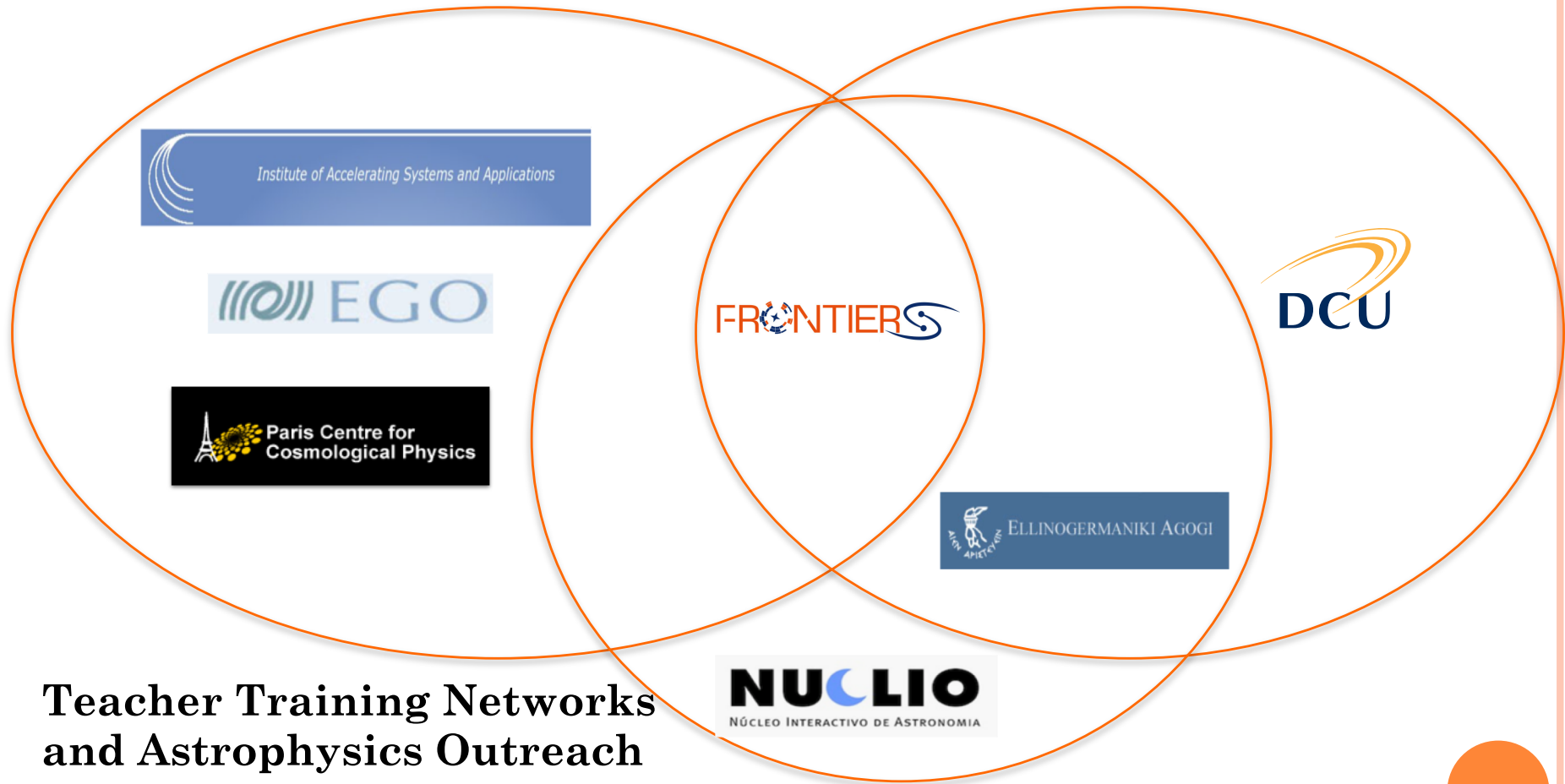
HOW;



BY BRINGING TOGETHER RESEARCH AND EDUCATIONAL INSTITUTIONS FROM ALL OVER EUROPE

Scientific Research

Science Education



**Teacher Training Networks
and Astrophysics Outreach**



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INVESTIGATING ALREADY EXISTENT OUTREACH
PRACTICES AND DRAWING LESSONS LEARNT
FROM THEM



INVESTIGATING ALREADY EXISTENT OUTREACH
PRACTICES AND DRAWING LESSONS LEARNT
FROM THEM

**CERN connects with IceCube to bring
science to schools**





INVESTIGATING ALREADY EXISTENT OUTREACH PRACTICES AND DRAWING LESSONS LEARNT







CERN's Beam Line for Schools Competition

CERN is offering high-school students from around the world the chance to create and perform a scientific experiment on a CERN accelerator beamline. What better way to learn about physics?



Find out more about CERN's Beamline for Schools (BL4S) competi...  

-  Leave
-  Invite
-  Customize Community
-  New sub-community

Managed By:

Emmanuel Chaniotakis



Markus Joos



Sarah Aretz



Created on: 06.07.2017

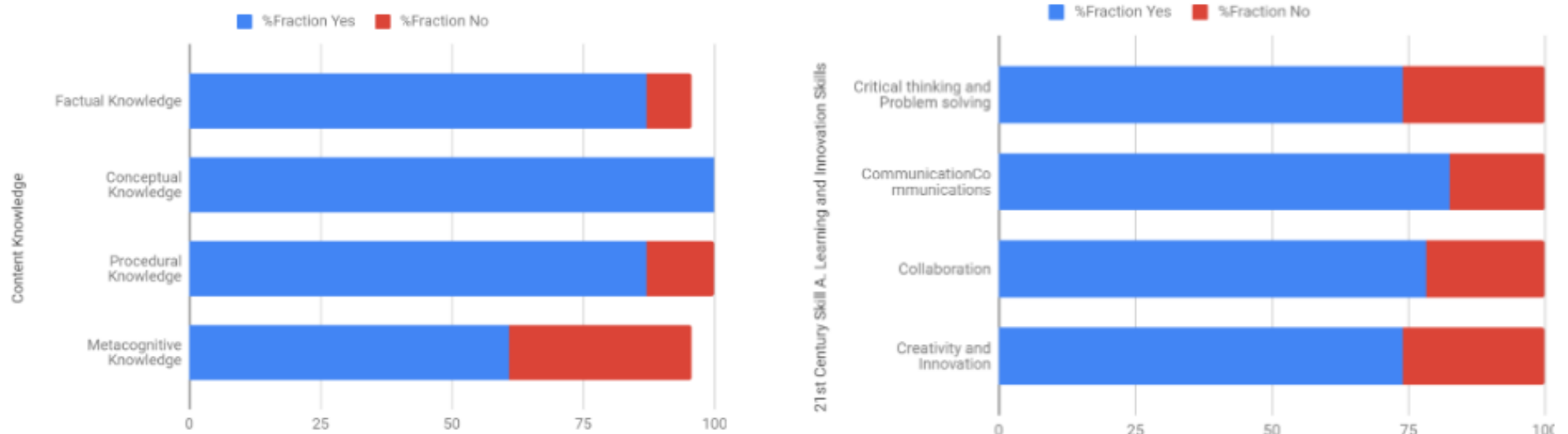
Last visited: 24.11.2017

Network of related communities

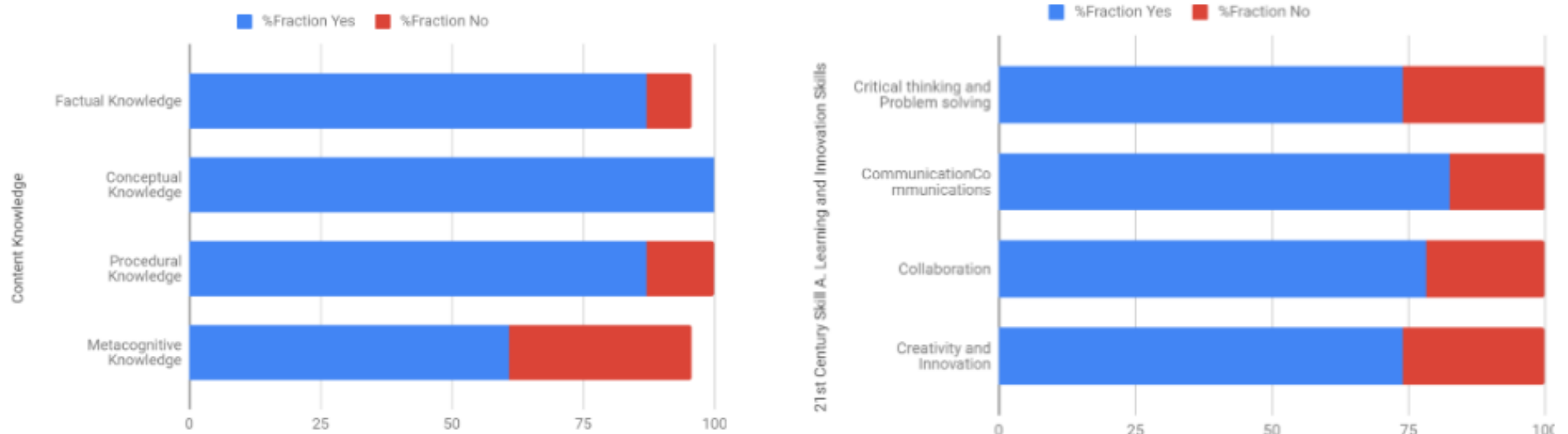
INVESTIGATING ALREADY EXISTENT OUTREACH PRACTICES AND DRAWING LESSONS LEARNT



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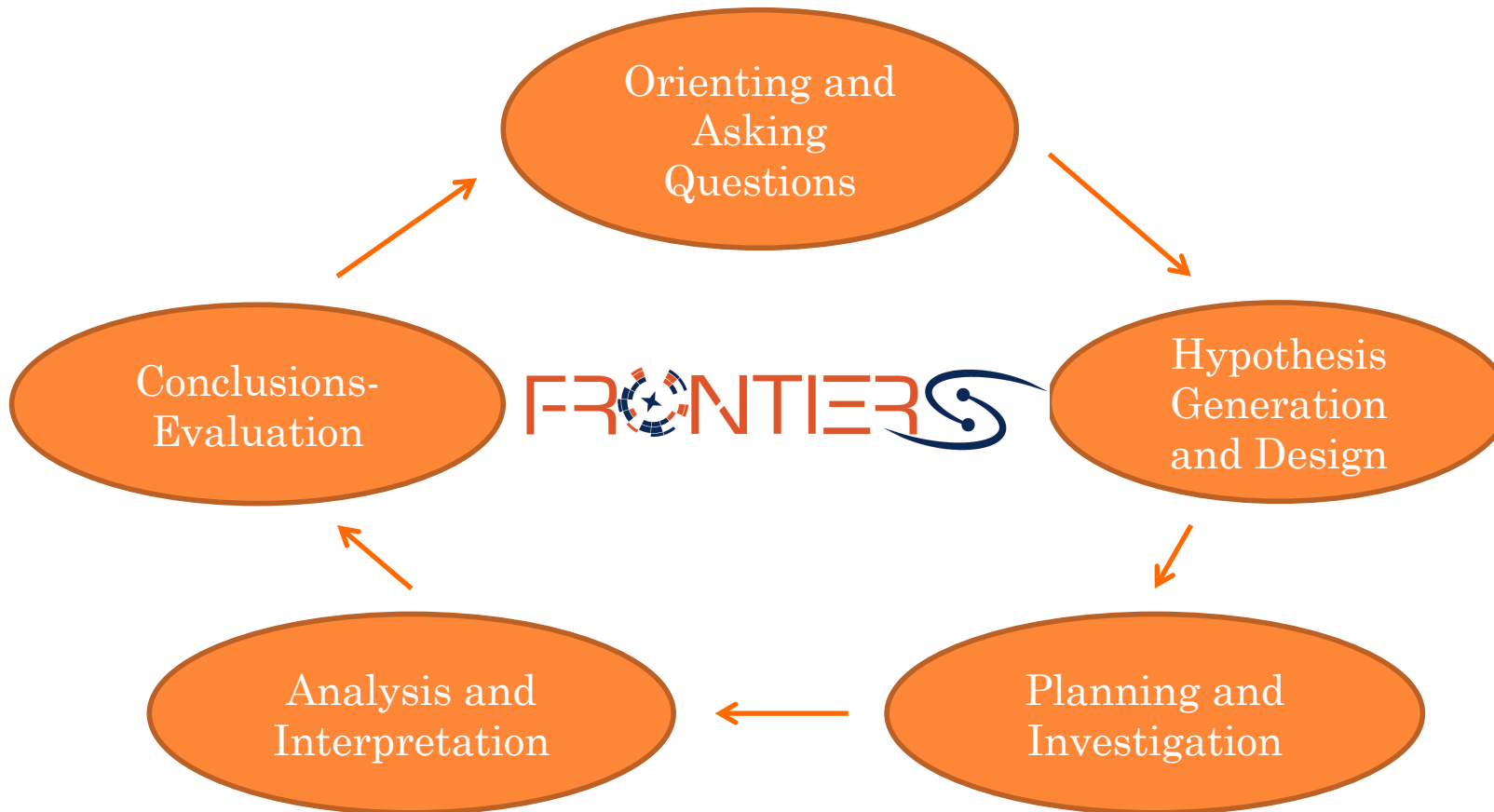


ADOPTING THE INQUIRY BASED SCIENCE EDUCATION PEDAGOGY

- Learners are **engaged** by scientifically oriented questions.
- Learners give priority to **evidence** which allows them to develop and **evaluate explanations** that address **scientifically oriented questions**.
- Learners **formulate explanations** from evidence to address scientifically oriented questions.
- Learners **evaluate their explanations** in light of alternative explanations, particularly those reflecting scientific understanding.
- Learners **communicate and justify** their proposed explanations.



ADOPTING THE INQUIRY BASED SCIENCE EDUCATION PEDAGOGY



<https://www.youtube.com/watch?v=TJQAfJwVGyk>



- **Orienting and Asking Questions.** The topic of the lesson is introduced, assumptions the students may have are challenged, and questions they may have are formulated.
- **Hypothesis Generation and Design.** During which the students develop one of their questions into a hypothesis.
- **Planning and Investigation.** In which the hypothesis previously developed is tested.
- **Analysis and Interpretation.** Where the students analyse the data collected from their investigation and refute or confirm the hypothesis.
- **Conclusion and Evaluation.** When the students communicate their findings.



DEVELOPING THE FRONTIERS

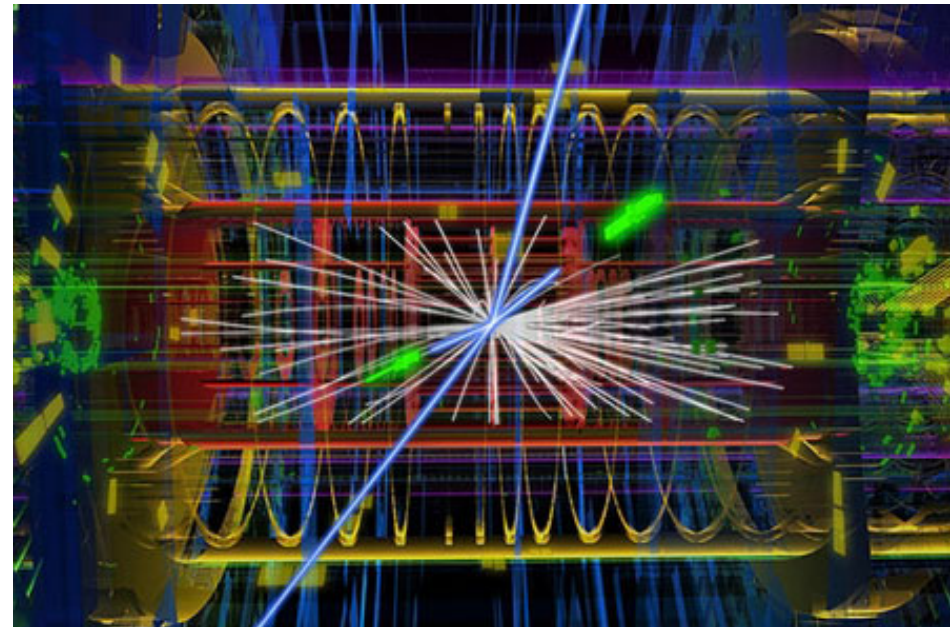
DEMONSTRATORS:

CUTTING EDGE EDUCATIONAL ACTIVITIES FOR YOUR CLASSROOM

FRONTIERS will prepare 20 demonstrator lessons that are about a modern physics topic for secondary school; ready to be used (or adapted); follow an inquiry methodology; available @ ISE platform:

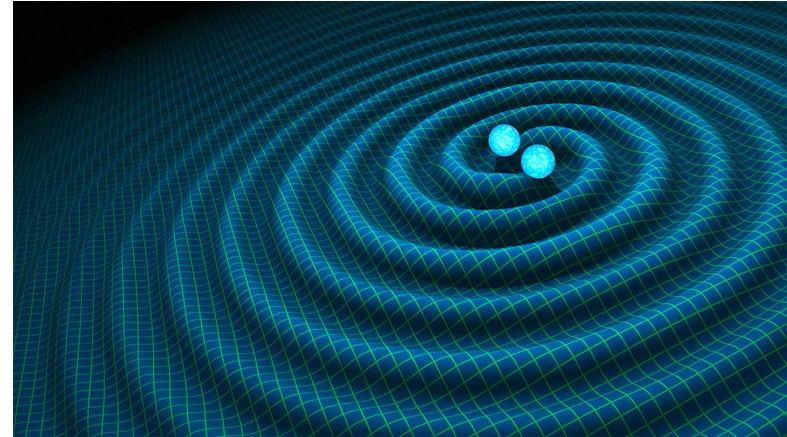
High Energy Physics

- Discover the Z and Higgs Bosons
- World Data Day
- Magnetic Field
- Let's Accelerate particles
- The ALICE Experiment at CERN
- Mass- Energy Equivalence



Gravitational Wave Astronomy

- VIRGO Virtual Visit
- VIRGO Control (Class) Room
- Gravitational Wave Noise Hunting
- Finding black-holes in a chirp”
- The Michelson Interferometer
- Earthquake Interferometer



Astrophysics – Astroparticle Physics



- Black Holes
- Solar Rotation
- Discovering Alien Worlds
- Build your own cloud chamber
- Relativistic Muons and Time Dilation
- Cosmic Rays
- Neutrino Astronomy
- Age of the Universe



5 phases of IBSE in educational Scenario

Hi User! ASSESSMENT SETTINGS HELP

ORIENTING & ASKING QUESTIONS HYPOTHESIS GENERATION & DESIGN PLANNING & INVESTIGATION ANALYSIS & INTERPRETATION CONCLUSION & EVALUATION

LISTEN CONTENT

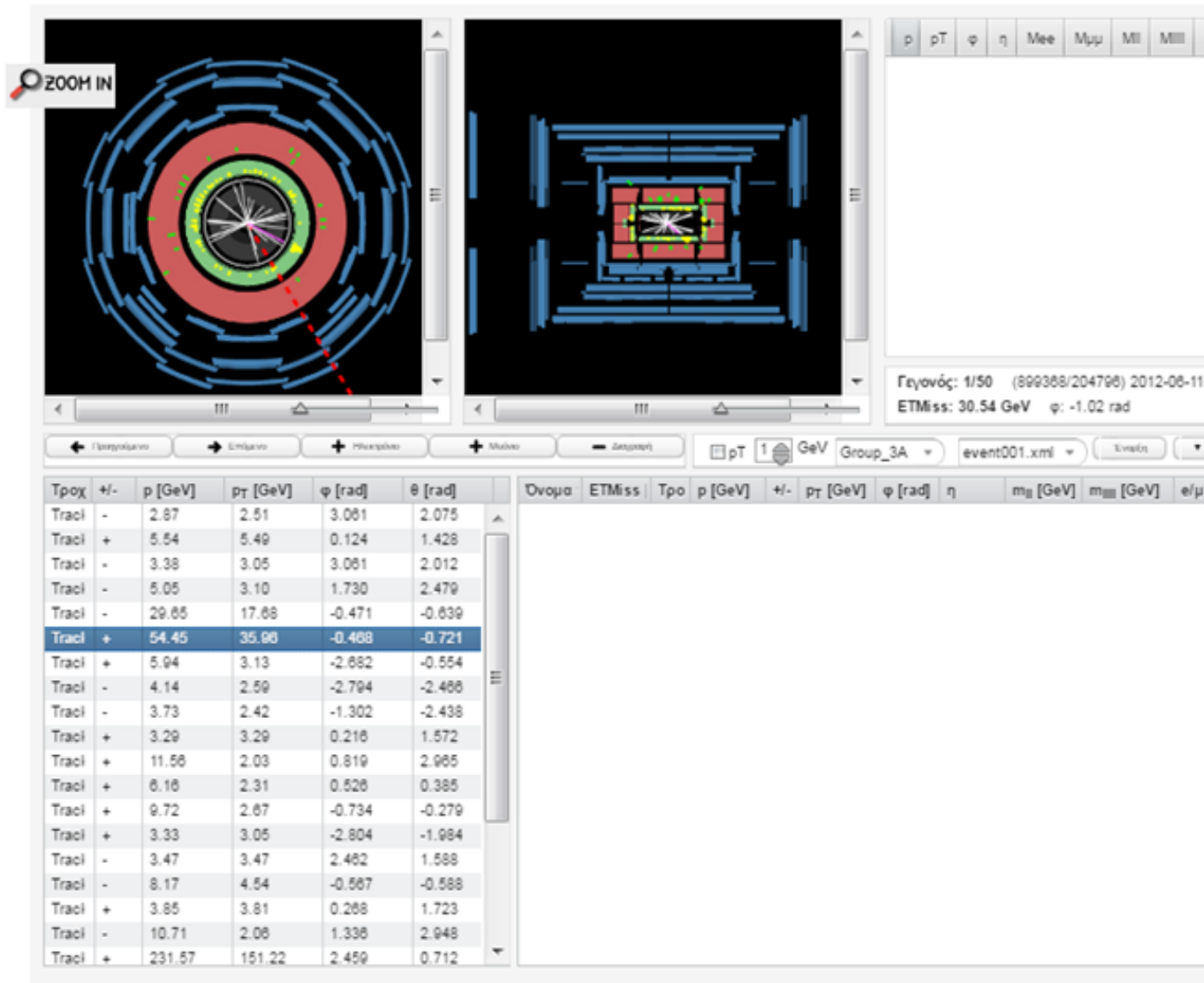
Orienting: Provide contact with the content and/or provoke curiosity

In February 11, 2016 a major scientific discovery was announced by the LIGO collaboration in USA. 100 years after the conception of Einstein's theory of General Relativity which describes the force of gravity in a new perspective, humankind comes to observe its greatest verification!

1.3 billion light years away, 2 gigantic black holes with masses almost 30 times the mass of the sun each travelling at speed close to the speed of light collided creating a cataclysmic cosmic event.

Planning and design of activities to connect with school curricula.

Embedding virtual e-science applications



- Στο πάνω μέρος της οθόνης παρουσιάζονται δύο όψεις του ανιχνευτή: Αριστερά μία εγκάρσια τομή του ανιχνευτή (κάθετη στις δέσμες)

Embedding virtual e-science applications

Assessing Problem Solving Skills and Knowledge Items

S_e
Γεια σου echaniot!
Αξιολόγηση
ΡΥΘΜΙΣΕΙΣ
ΒΟΗΘΕΙΑ

Ερωτήσεις Επίλυσης Προβλημάτων-Στατιστικά Δεδομένα σε Πραγματικό Χρόνο
Γνωστικό Αντικείμενο-Στατιστικά Δεδομένα σε Πραγματικό Χρόνο

Αποτελέσματα Ερωτήσεων Επίλυσης Προβλημάτων (ΕΕΠ)
Αποτελέσματα Γνωστικού Αντικειμένου
Μέσος Χρόνος Τάξης ανά Ώρα

Αριθμός Μαθητών που συμμετείχαν στο Μάθημα: **11**

Αριθμός Μαθητών που απάντησαν σε όλες τις Ερωτήσεις Επίλυσης Προβλημάτων: **12**

ΕΞΑΓΩΓΗ ΔΕΔΟΜΕΝΩΝ

ΑΝΑΝΕΩΣΗ

ΟΝΟΜΑ ΜΑΘΗΤΗ	ΧΑΜΗΛΟ	ΜΕΣΟ	ΥΨΗΛΟ
ΧΑΡΙΣ 15	4	2	2
ΕΥΝΟΣΤΑ 15	2	1	1
ΣΤΥΒ 3	3	2	3
ΜΑΝΟΣ 15	2	2	4
ΚΟΥΚΟΣ ΑΡΧΟΣΤΟΛΑΚΗΣ 15	2	3	3
ΜΙΧΑΛΗΣ 15	3	1	4

Ερωτήσεις Επίλυσης Προβλημάτων-Στατιστικά Δεδομένα σε Πραγματικό Χρόνο
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Μέσος Χρόνος Τάξης ανά Ώρα

Χώρες Αναφοράς του PISA

GERMANY

ΑΝΑΝΕΩΣΗ

Levels of proficiency

Level	Pisa, ref. Germany %	SUM PISA, Mean %	SUM CLASS %
Low	~39	~43	~34
Moderate	~48	~45	~28
High	~13	~11	~37

DEVELOPING NATIONAL AND INTERNATIONAL COMMUNITIES OF PRACTICE FOR EDUCATORS

- Giving opportunities for immediate interaction and feedback between researchers and educators.
- Useful for the exchange of good practices.
- With the capacity to host educational content
- Offering you the tools to create your own educational content.



DEVELOPING NATIONAL AND INTERNATIONAL



Η κοινότητα του FRONTIERS στην Ελλάδα

Greece

Parent Community: **Bringing Nobel Prize Physics in the Classroom**

Καλωσορίσατε στην Ελληνική κοινότητα του FRONTIERS!



Managed By:

Emmanuel Chaniotakis



Stelios Vourakis



Created on: 06.06.2019

Last visited: 11.10.2019

Network of related
communities





Bringing Nobel Prize Physics in the Classroom

Domain: Science



Have you ever wondered how we can integrate Modern Physics in the school curriculum? Do you believe that exciting discoveries such as the Discovery of Gravitational Waves or the Discovery of the Higgs Boson can be brought in the classroom in a consistent and understandable fashion? The FRONTIERS Project brings together expertise from frontier scientific research and educational research in formal and informal science learning, along with user communities across Europe, in order to demonstrate how Nobel Prize winning science can be systematically integrated in the school curriculum.

How do I join the FRONTIERS team?

Make your registration (by clicking on register on the top of the page) and press [join community](#). Your journey just began!

You can also join the FRONTIERS communities in [France](#), [Greece](#), [Ireland](#), [Italy](#) and [Portugal](#)!

What are the benefits of joining the FRONTIERS team?

- You will have access to a wealth of [educational resources](#) introducing concepts from Astrophysics and Gravitational Wave Astronomy to Particle and Astroparticle Physics using real data!!
- You will be able to organize virtual visits in Large Research Infrastructures such as CERN and VIRGO for your students!!

Leave

Invite

Customize Community

New sub-community

Managed By:

Emmanuel Chaniotakis



Created on: 16.04.2019

Last visited: 13.06.2019

Network of related communities



FRONTIERS Community in Greece

<https://portal.opendiscoveryspace.eu/en/community/frontiers-community-greece-855295>

FRONTIERS Community in Ireland

<https://portal.opendiscoveryspace.eu/en/community/frontiers-community-ireland-855298>

Bringing Nobel Prize Physics in the Classroom

FRONTIERS Community in Italy

<https://portal.opendiscoveryspace.eu/en/community/frontiers-community-italy-855296>

<https://portal.opendiscoveryspace.eu/en/community/frontiers-community-portugal-855297>

FRONTIERS Community in Portugal




FRONTIERS Community in France

<https://portal.opendiscoveryspace.eu/en/community/frontiers-community-france-855299>



Frontiers Classroom

Yvonne Crotty

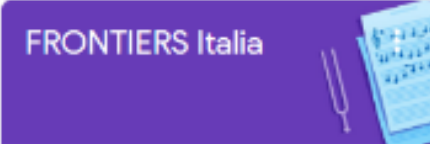


FRONTIERS GREECE

1 μεθότης




FRONTIERS Italia



FRONTIERS em Portu...

Priscilla Doran



FRONTIERS FRANCE

PCCP Frontiers



 FRONTIERS Community in France

<https://portal.opendiscoveryspace.eu/en/community/frontiers-community-france-855299>



FRONTIERS:
Bringing Nobel
Prize Physics in the
Classroom

Δημόσια ομάδα



Αλληλεπίδραση ως
Frontiers Project

Πληροφορίες

Συζήτηση

Μέλη

Φωτογραφίες

Συντονισμός ομάδας

Ποιότητα ομάδας

Αναζήτηση στην ομάδα

Συνομιλίες

Σεμινάρια Σύγχρον... 20+

ΕΛΛΗΝΕΣ ΕΚΠΑΙΔ... 20+

Teachers from Eur... 20+

Galileo Teachers Gr... 2

ΦΥΣΙΚΗ .- 2

Thank you, Next 20+



Είστε μέλος

Ειδοποιήσεις

Κοινοποίηση

Περισσότερα

Δημοσιεύστε κάτι
Περισσότερα

Φωτογραφία/βί...

Live βίντεο



Γράψτε κάτι...

Φωτογραφία...

Ομαδική προ...

Ζητήστε προ...

ΟΜΑΔΑ ΑΠΟ



Frontiers Project

Αρέσει σε 290 άτομα

ΚΑΤΗΓΟΡΙΟΠΟΙΗΣΗ ΔΗΜΟΣΙΕΥΣΕΩΝ

+ Δημιουργία θέματος

Προσθέστε θέματα σε δημοσιεύσεις για να βοηθήσετε τα μέλη της ομάδας να βρουν τις πληροφορίες που τους ενδιαφέρουν.

ΠΡΟΣΚΛΗΣΗ ΜΕΛΩΝ

Προσκαλέστε άτομα που τους αρέσει η Σελίδα σας, Frontiers Project, να γίνουν μέλη αυτής της ομάδας.

Πρόσκληση

ΜΕΛΗ

9 μέλη

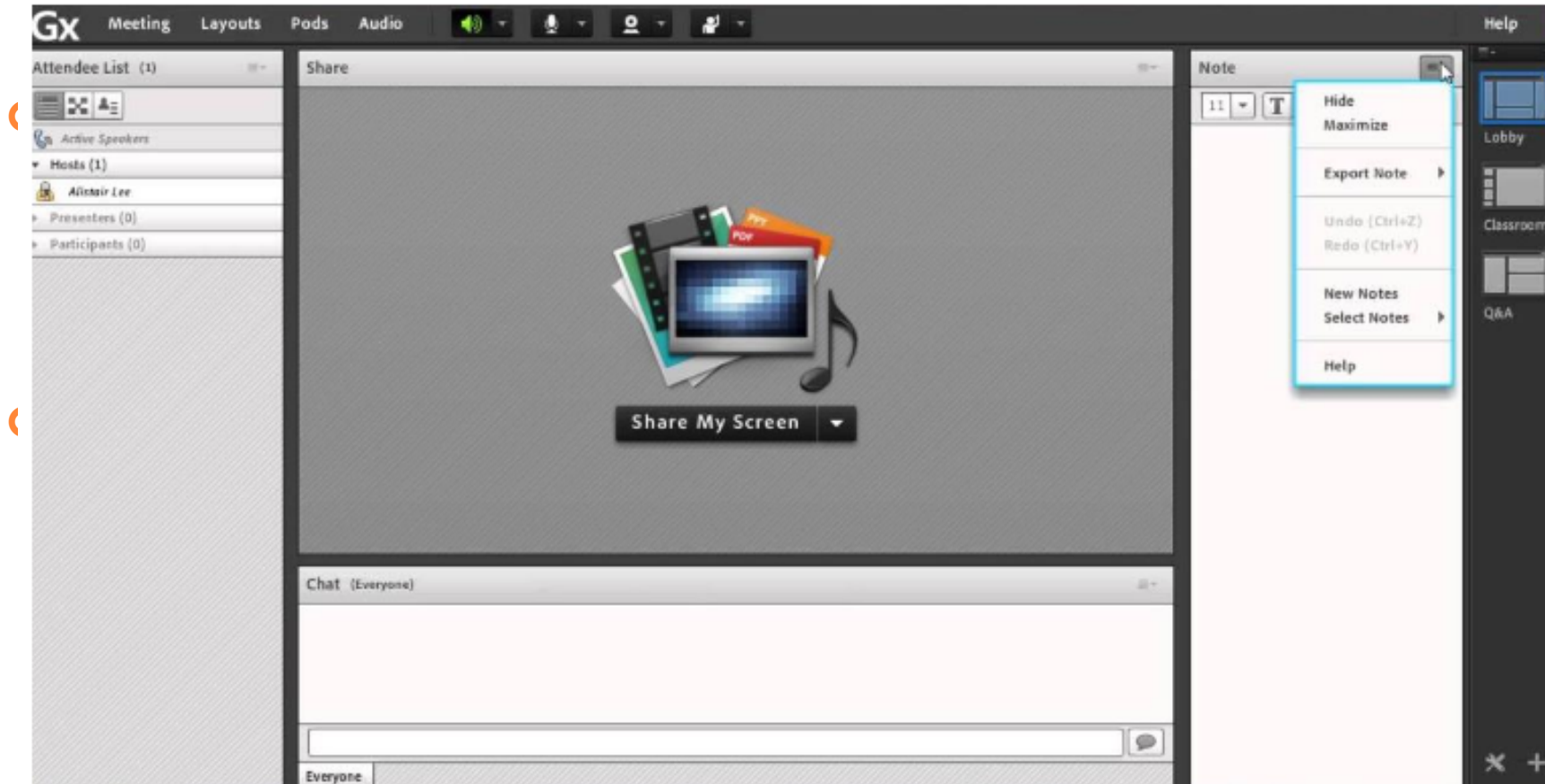
<https://portal.opendiscoveryspace.eu/en/community/frontiers-community-france-855299>

OFFERING CONTINUOUS TRAINING AND
SUPPORT FOR THE IMPLEMENTATION OF
FRONTIERS ACTIVITIES IN YOUR CLASSROOM.

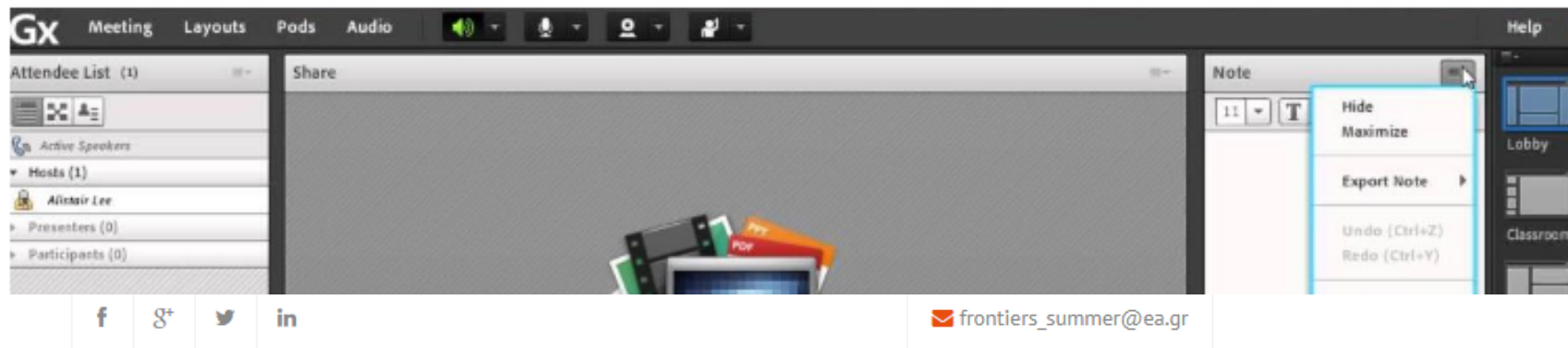
- Through the systematic organization of in situ and online training workshops for continuous professional development..
- Through the organization of summer and winter schools.



OFFERING CONTINUOUS TRAINING AND SUPPORT FOR THE IMPLEMENTATION OF FRONTIERS ACTIVITIES IN YOUR CLASSROOM

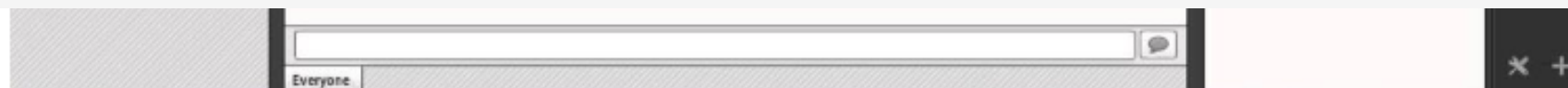


OFFERING CONTINUOUS TRAINING AND SUPPORT FOR THE IMPLEMENTATION OF FRONTIERS ACTIVITIES IN YOUR CLASSROOM



[HOME](#) [ABOUT](#) [PROGRAMME](#) [VENUE](#) [REGISTRATION](#) [ORGANIZERS](#) [CONTACT](#)

Frontiers Summer School



IF..

- You believe that it is worthwhile to introduce topics such as the discovery of Gravitational Waves or of the Higgs Boson in your classroom in a systematic and understandable fashion.
- You want your students to be able to perform virtual visits at VIRGO or CERN, to analyze real data and to interact with leading experts in Physics and Education research.
- You want to receive continuous training and support in these scientific topics.
- You want to become part of our international community of educators and researchers with who you will be able to interact, collaborate, exchange ideas and practices.



IF..

- You believe that it is worthwhile to introduce topics such as the discovery of Gravitational Waves or of the Higgs Boson

We invite you to become members of the FRONTIERS family!

these scientific topics.

- You want to become part of our international community of educators and researchers with who you will be able to interact, collaborate, exchange ideas and practices.



HOW DO I BECOME A FRONTIERS TEACHER?

It is done in 5 easy steps:

- Subscribe to our [newsletter!](#)
- Register to the project and become a FRONTIERS teacher: <http://bit.ly/join-FRONTIERS>
- Contribute to our [Facebook group!](#)
- Participate in our training workshops to be announced soon!
- Implement at least one FRONTIERS activity in your classroom!



Throughout your engagement with FRONTIERS you will be offered continuous support and training, you will receive online badges and you will be able to participate in educational competitions with great prizes!

- Subscribe to our [newsletter](#)!
- Register to the project and become a FRONTIERS teacher: <http://bit.ly/join-FRONTIERS>
- Contribute to our [Facebook group](#)!
- Participate in our training workshops to be announced soon!
- Implement at least one FRONTIERS activity in your classroom!



THANK YOU VERY MUCH

For further details visit:

FRONTIERS website:

www.frontiers-project.eu

Facebook page:

<https://www.facebook.com/frontierseu>

Facebook group:

<https://www.facebook.com/groups/665957563876838/>

Don't hesitate to contact us : info@frontiers-project.eu

