

The Educational Activities of the European Geosciences Union

Carlo Laj

Chairman

EGU Committee on Education

Cape Town, August 2017

The Committee on Education of EGU was created in 2002 with the purpose of developing educational activities at EGU.

- 1) Geosciences Information for Teachers (GIFT) workshops
- (At the EGU General Assemblies and more recently at Alexander von Humboldt topical Conferences)
- 2) Educational sessions at EGU General Assemblies (teachers and scientists and sciences educators)
- 3) Gift Distinguished Lectures series
- 4) Teachers at sea
- 5) Foster collaborations between schools

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- 5) Planet Press
- 5) Foster collaborations between schools

Typically a GIFT workshop in Vienna includes:

- 80 participants
- 20 countries
- 8-9 conferences
- 2 half-days practical works with hands-on activities experts
- 4 oral teacher-to-teachers communications
- 40-45 teachers' posters
- 1 visit to local institutions in Vienna (UNOOSA, IAEA...)

Visit and reception at the Vienna Museum of Natural Hystory



2009

Topic: The Earth from Space

Programme Presentations Brochure Web Conferences

2008

Topic: The Carbon Cycle

Programme Presentations Brochure

2007

Topic: Geosciences in the city

Programme Presentations Brochure

2006

Topic: The Polar Regions

Programme Presentations Brochure

2005

Topic: The History of the Earth Programme Presentations Brochure



The time spiral, @Sveriges geologiska undersökning (SGU) Permission 30-109/2005 from the Geological Survey of Sweden

GIFT - 2005

The History of the Earth

Geophysical Information for Teachers Workshop Vienna, Austria, 26-27 April 2005





GIFT - 2004 The Ocean

Geophysical Information for Teachers Workshop Nice, France, 29-30 April 2004





GIFT - 2010 Energy and Sustainable Development

Geosciences Information for Teachers Workshop Vienna, Austria, 2-5 May 2010





GIFT - 2012 Water!

Geosciences Information for Teachers Workshop Vienna, Austria, 23-25 April 2012



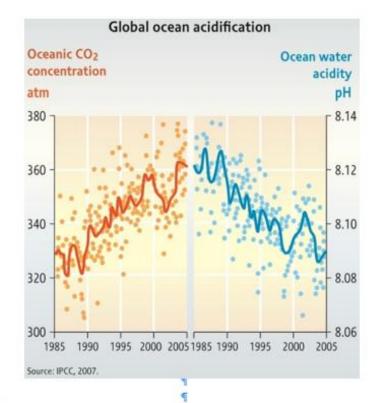
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GIFT - 2011 Ocean Acidification

Geosciences Information for Teachers Workshop

Penang, Malaysia, June 23-24 2011 T





Tenth EGU Alexander von Humboldt International Conference



GIFT - 2015 Water!

Geosciences Information for Teachers Workshop Adis Ababa, Ethiopía, November 18-19-2015









GIFT - 2012

Natural Disasters, Global Change, and the Preservation of World Heritage Sites

Geosciences Information for Teachers Workshop Cusco, Peru, November 15-16, 2012







GIFT Workshop 2016 Mineral Resources - Natural Hazards Cape Town, South Africa, 27 § 28 August, 2016









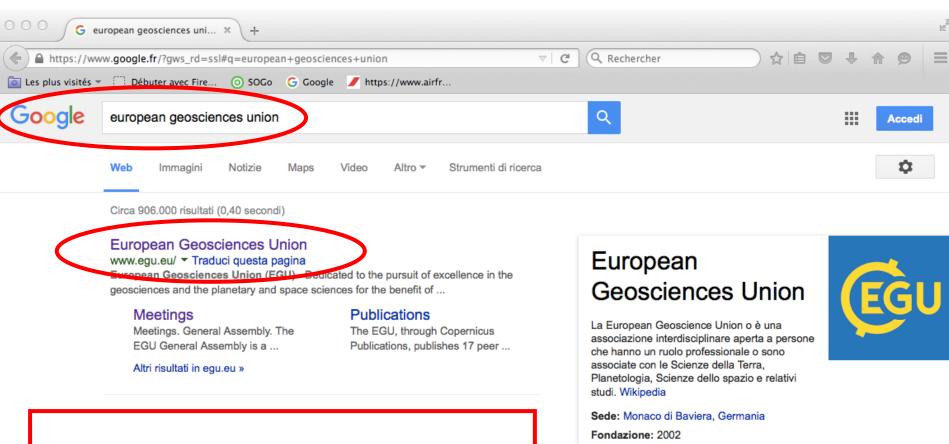












www.egu.eu

... their work and discuss their ideas with experts in all fields of geoscience.

European Geosciences Union - Wikipedia

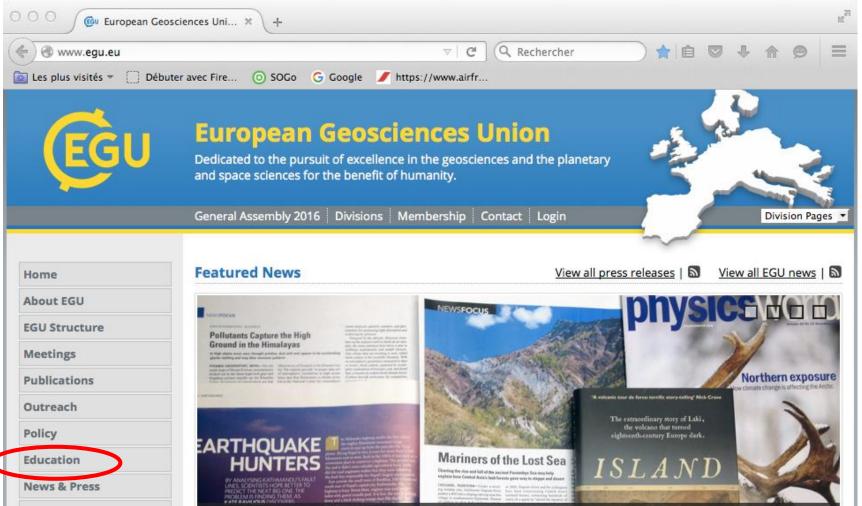
https://it.wikipedia.org/wiki/European Geosciences Union -

La European Geoscience Union o (EGU) è una associazione interdisciplinare aperta a persone che hanno un ruolo professionale o sono associate con le ...

European Geosciences Union - Wikipedia, the free ... https://en.wikipedia.org/.../European_Geosciences_... ▼ Traduci questa pagina



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Early Career Scientists

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related to their projects. The deadline for applications is 6 December. [Read more]

Press Release: Applications open for EGU 2016 Science Journalism Fellowships (up to €5k)

The European Geosciences Union (EGU) is now accepting applications for the 5th edition of its Science Journalism

Fellowship competition. The fellowships enable journalists to follow scientists on location to report on ongoing

research in the Earth, planetary or space sciences. Successful applicants receive up to €5000 to cover expenses

Journal Watch



Find the EGU on

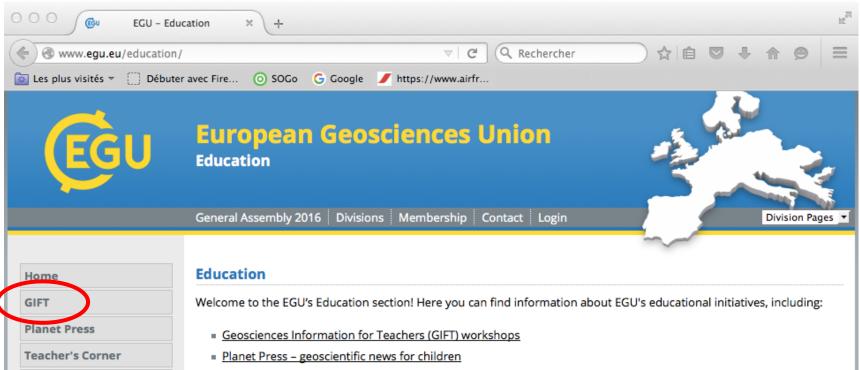


Voting for the next EGU President/Vice-President and General Secretary



Ice water content vertical profiles of high-level clouds: classification and impact on radiative fluxes

From now until 4 December 2015, EGU



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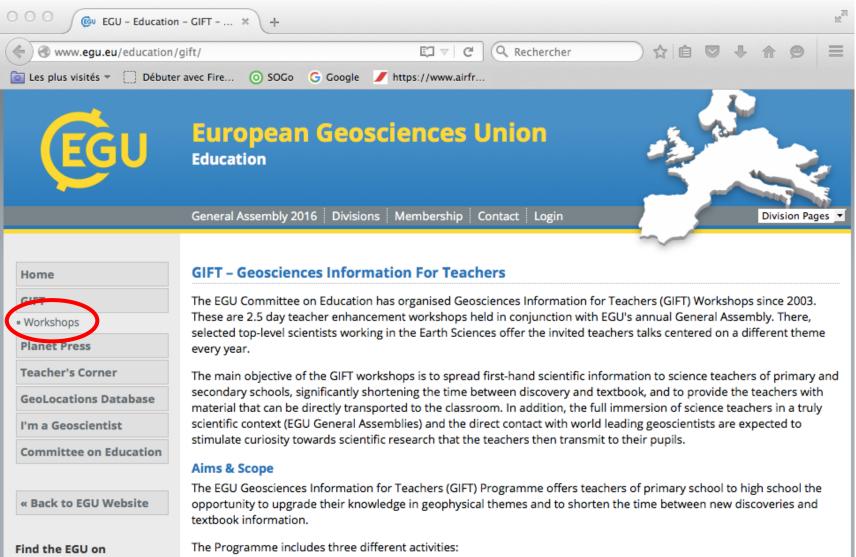
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- Imaggeo
- EGU TV

- Teacher's Corner teaching resources in the geosciences
- GeoLocations Database geological locations across Europe
- I'm a Geoscientist engagement event connecting school students and geoscientists

You can also access the contact details of the EGU Committee on Education on this page.

News

- Geosciences Information for Teachers (GIFT) Workshop Topic: The Solar System and beyond The GIFT-2016 will take place in Vienna, April 18-20 2016, during the General Assembly of the European Geosciences Union. The theme of this workshop, organized in close cooperation with the European Space Agency (ESA) is « The Solar System and Beyond ». During two and a half days, the workshop will explore the major characteristics of the solar system with the latest information gathered from recent space exploration using man-made satellites and give also the latest theories on the formation of the solar system. Special attention will be paid to the Moon and to Mars. [Read more]
- GIFT Distinguished Lectures Series Call for Proposals
 The EGU Committee on Education is going to inaugurate an annual series of Geosciences Information for Teachers
 (GIFT) Distinguished Lectures, to be given by top scientists who have previously participated as speakers in GIFT
 workshops during EGU General Assemblies. High school teachers, high school directors and educators for teachers
 from the European area are welcome to request a lecture, for which the EGU Committee on Education will cover the
 travel and subsidise the costs of the speaker. [Read more]





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- EGU Blogs
- Imaggeo
- EGU TV

■ The GIFT Workshop:

Organised at each EGU General Assembly, this symposium combines presentations on current research by leading scientists with hands-on activities presented by science educators for about 100 invited teachers.

The Fall Meeting:

Organised over a long weekend, this workshop brings together representatives of the European funded and the international "science and education" programmes on selected topics to prepare the next EGU GIFT Symposia.

■ The GIFT Home Site:

Organised as open platform for all national, European or international "science and education" programmes,



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GIFT Workshops

2017 GA 2017 GIFT Workshop

Austria Center Vienna, Vienna, Austria, 24 - 26 April 2017

Topic: The Mediterranean

2016 Merida 2016 GIFT Workshop

Merida, Yucatan, Mexico, 05 - 08 October 2016

Topic: Natural Hazards, Disaster Risks and Societal Implications

2016 Cape Town 2016 GIFT Workshop

Cape Town, South Africa, 27 - 28 August 2016 Topic: Mineral Resources - Natural Hazards

2016 GA 2016 GIFT Workshop

Austria Center Vienna, Vienna, Austria, 18 - 20 April 2016

Topic: The Solar System and beyond

2015 Adis Ababa 2015 GIFT Workshop

Adis Ababa, Ethiopia, 18 - 19 November 2015

Topic: Water!

2015 GA 2015 GIFT Workshop

Austria Center Vienna, Vienna, Austria, 12 - 15 April 2015

Topic: Mineral Resources

2014 GA 2014 GIFT Workshop

Austria Center Vienna, Vienna, Austria, 27 - 30 April 2014

Topic: Our changing Planet

2014 Istanbul 2014 GIFT Workshop

2013 GA 2013 GIFT Workshop

Istanbul, Turkey, 27 - 28 March 2014

Topic: High Impact Natural Hazards Related to the Euro-Mediterranean Regions

2014 UNESCO-EGU-ESA GIFT Africa Workshop

Port Elizabeth, South Africa, 26 - 28 February 2014

Topic: Climate Change and Human Adaptation

Presentations & Videos

Presentations

Brochure (PDF, 14.0 MB)

Presentations

■ Brochure (PDF, 5.4 MB)

Presentations & Videos

Brochure (PDF, 5.7 MB)

Presentations

Brochure (PDF, 1.6 MB)

Presentations & Videos

Brochure (PDF, 3.0 MB)

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Brochure (PDF, 6.7 MB)

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Brochure (PDF, 2.9 MB)

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GA 2015 GIFT Workshop - Mineral Resources

Monday, 13 April 2015

- Welcome!
 - Günter Bloeschl President of EGU
- Practical instructions for the workshop
 Carlo Laj

EGU Committee on Education

Mineral raw materials: sustainability issues for the XXIst century

Patrice Christmann

BRGM, France

Presentation (PDF, 2.1 MB)

• Mineral deposits - where do they come from and how did they get there? Laurence Robb

Department of Earth Science, University of Oxford, UK

Presentation PDF, 9.4 MB)

Role of organic geochemistry in mineral deposits

Kliti Grice

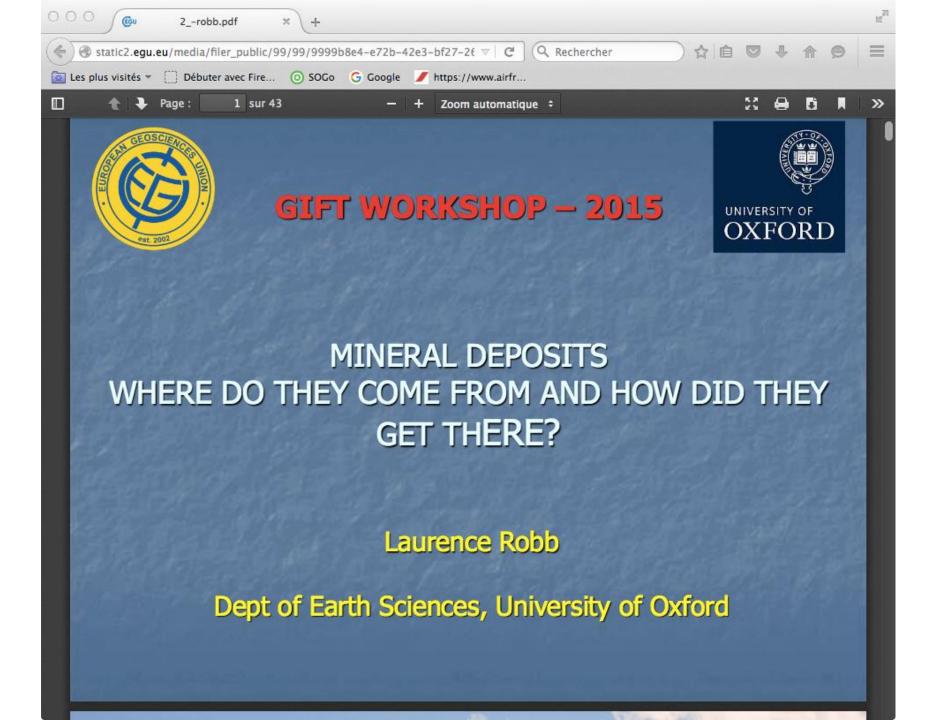
Department of Chemistry, Curtin University, Australia <u>Presentation</u> (PDF, 5.2 MB)

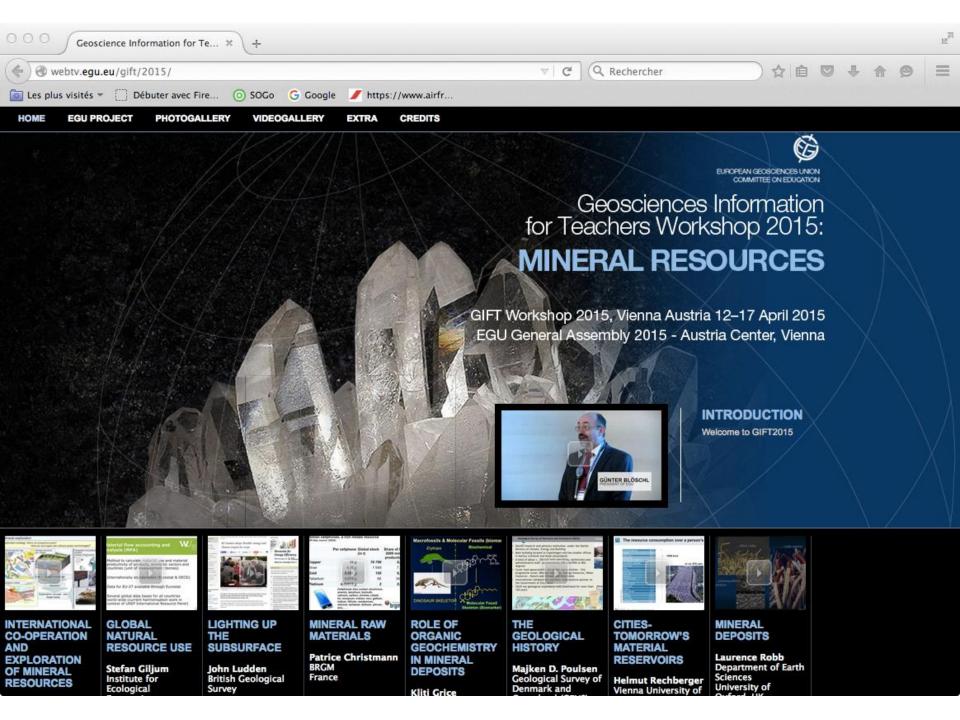
Instructions for the poster session EOS02

Eve Arnold

Stockholm University, Sweden

Presentation of CD 'Minerals in your life'
 Claudia Delfini









April 12-17, 2015 **GIFT WORKSHOP 2015** Vienna, Austria

> EGU General Assembly 2015 Austria Center, Vienna

MINERAL DEPOSITS from GIFT2015 on Vimeo



INTERNATIONAL CO-OPERATION AND EXPLORATION OF MINERAL RESOURCES



GLOBAL NATURAL **RESOURCE USE**

Stefan Giljum Institute for **Ecological**



LIGHTING UP THE SUBSURFACE

John Ludden **British Geological** Survey



MINERAL RAW **MATERIALS**

Patrice Christmann BRGM France



ROLE OF **ORGANIC GEOCHEMISTRY** IN MINERAL **DEPOSITS**

Kliti Grice

THE **GEOLOGICAL** HISTORY

Majken D. Poulsen Geological Survey of Denmark and



CITIES-TOMORROW'S MATERIAL RESERVOIRS

Helmut Rechberger Vienna University of



MINERAL DEPOSITS

Laurence Robb Department of Earth Sciences University of



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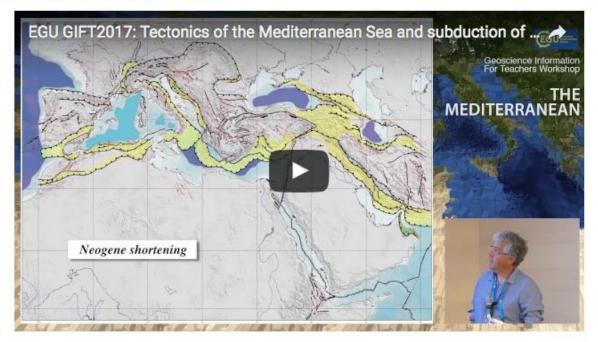
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GA 2017 GIFT Workshop - The Mediterranean

Monday, 24 April 2017

- Welcome! Hans Thybo, President of EGU
- Introduction to the 2017 GIFT workshop Carlo Laj, EGU Committee on Education
- Tectonics of the Mediterranean Sea and subduction of the African plate: from basins to mountains, from mountains to basins

Laurent Jolivet, Université d'Orléans, Paris, France Presentation (PDF, 139.0 MB)



Tuesday, 25 April 2017

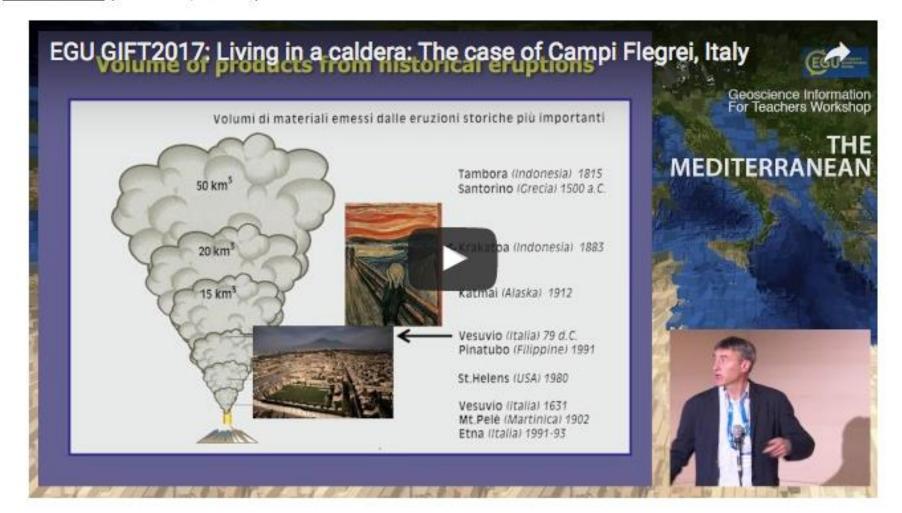
Living in a caldera: The case of Campi Flegrei, Italy

Paolo Papale, INGV, Pisa, Italy

Presentation (PDF, 9.9 MB)

Presentation (AVI Video, 27.0 MB)

Presentation (AVI Video, 8.0 MB)





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Education

Welcome to the EGU's Education section! Here you can find information about EGU's educational initiatives, including:

- Geosciences Information for Teachers (GIFT) workshops
- Planet Press geoscientific news for children
- Teacher's Corner teaching resources in the geosciences
- GeoLocations Database geological locations across Europe

You can also access the contact details of the EGU Committee on Education on this page.

News

- EGU Committee on Education seeking two new members
 - The Committee on Education, which coordinates the EGU activities related to secondary and tertiary education, is looking for new members to help further its programmes. [Read more]
- Geosciences Information for Teachers (GIFT) Workshop Topic: The Mediterranean The 2017 Geosciences Information For Teachers (GIFT) workshop will take place on April 24-26 2017 at the EGU General Assembly in Vienna, Austria. The theme for the GIFT workshop is 'The Mediterranean'. It has been organized by the Committee on Education of EGU, with a large participation of the Istituto Nazionale di Geofisica e

Vulcanologia (INGV) Roma, Italy. The mediterranean area shows a distinctive geological fingerprint which attracted generations of Earth scientists. Mountain chains, orogenic belts, extensional basins, active volcanoes, violent earthquakes, tsunamis, landslides and floods testify to the vigorous active tectonics that characterize the region. The same area, owing to the favorable climate, availability of resources (i.e., water and raw materials) and the presence of the sea, allowed for trade and

cultural exchanges, and made it a cradle of culture. Currently, the area is densely populated with progressively increasing anthropogenic pressures, which, when combined with the peculiar geological setting, result in heightened vulnerability to climate change enhanced by increasing atmospheric carbon dioxide.

The workshop will explore most of these aspects. A hands-on experience session will also be part of the workshop. [Read more]

GIFT Distinguished Lectures Series - Call for Proposals

The EGU Committee on Education is going to inaugurate an annual series of Geosciences Information for Teachers (GIFT) Distinguished Lectures, to be given by top scientists who have previously participated as speakers in GIFT workshops during EGU General Assemblies. High school teachers, high school directors and educators for teachers from the European area are welcome to request a lecture, for which the EGU Committee on Education will cover the



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EGU Planet Press

You can find all Planet Presses, including print versions and translations, in the Articles section.

What is it?

The EGU began producing science press releases in February 2012 to help raise awareness of exciting and relevant geoscience research published in one of the EGU's 17 open access journals spanning the Earth, planetary and space sciences.



Press releases are aimed at journalists to help them digest the scientific research quickly and write up their own stories for media outlets - newspapers, television and online. Most science journalists however have a background in science, or at least a lot of experience dealing with cutting-edge scientific research, so we wanted to produce a version of our press releases that could be understood by everyone – even kids!

So say hello to Planet Press, the new bitesize press releases for kids, barents and educators to get to grips with the latest geoscientific research going on across the world.

Planet Press is an initiative aimed at getting kids (mainly 7-13 year olds), parents, and educators interested in and engaged with up to date scientific research and news. Each Planet Press is reviewed by at least one scientist and one educator to ensure the content is scientifically accurate and that the language used is appropriate for the 7-13 age range.

How to use Planet Press

We have designed our Planet Press releases to be used by kids, parents and educators at home or at school as a learning aid, inspirational tool or simply as news pieces to help you keep up to date with exciting new science.

If you are an educator these press releases can be used in the classroom to aid teaching about current subjects such as climate change or earthquakes and tsunamis, to make lessons more interesting and relevant by taking into account modern science and developments. Use Planet Press releases in conjunction with other educational resources we have on offer through our educational database.

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Planet Press Articles



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Remove carbon dioxide from the air or risk young people's future

18 July 2017

According to a team of scientists led by James Hansen, a professor at the Columbia University Earth Institute in the US, formerly at NASA, we need to remove some of the carbon dioxide already in the atmosphere to limit global warming to a level that would safeguard children's futures [Read more]

High altitudes help slow down Antarctica's warming

18 May 2017

When it comes to climate change, the Arctic and the Antarctic are poles apart. At the north of the planet, temperatures are increasing twice as fast as in the rest of the globe, while warming in Antarctica has been milder. A new study published in Earth System Dynamics shows that the high elevation of Antarctica might

help explain why the two poles are warming at different speeds. [Read more]



Rising seas and erosion spell trouble for coral reefs

20 April 2017

Coral reefs can usually be found in shallow, clear waters in tropical oceans. They might look like they are made up of rocks, but they are actually live organisms that need sunlight to survive. If the sea level rises too fast, the corals can't grow fast enough to keep up. If the water gets too deep, corals can't get the

sunlight they need. And that's not all that cause trouble for corals. [Read more]



Less snow and a shorter ski season in the Alps

16 February 2017

A new research study, published in the scientific journal The Cryosphere by Swiss scientists, shows that large parts of the Swiss Alps could lose up to 70% of snow cover by 2100. However, if humans manage to control greenhouse gas emissions and limit global warming, only about 30% of snow cover will be lost

[Read more]



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Remove carbon dioxide from the air or risk young people's future

18 July 2017

Greenhouse gases, including carbon dioxide, trap energy from the Sun in the Earth's atmosphere. Human activities including farming, transport and industry release a large amount of these gases to the air. There is so much in the atmosphere now, that the Earth is heating up faster than at any time in the planet's recent history. This global warming will have unpleasant consequences, such as more frequent and severe heat waves or droughts, as well as a rise in sea level, which could affect millions of people living in coastal areas.



We can limit these effects by reducing the amount of greenhouse gases we release to the atmosphere: by using energy more efficiently and from renewable sources, improving air conditioners or eating less meat, for example. But a new study published in Earth System Dynamics says this will not be enough. According to a team of scientists led by James Hansen, a professor at the Columbia University Earth Institute in the US, formerly at NASA, we also need to remove some of the carbon dioxide already in the atmosphere to limit warming to a level that would safeguard children's futures.

Hansen says that If we start to reduce how much we emit right now, we only need to remove a small amount of carbon dioxide from the atmosphere to ensure warming does not get out of hand. Simple and relatively cheap measures, such as planting more trees, could do the trick. But if we continue to release greenhouse gases the way we have been doing, we would need to develop new technology to suck up huge amounts of carbon dioxide from the atmosphere to avoid global warming's most dangerous consequences.

"It is apparent that governments are leaving this problem on the shoulders of young people. This will not be easy or inexpensive," says James. Hopefully this study will encourage governments to take action against global warming.



Large-scale wind power plant in China (Credit: Wenzhu Hou, distributed via imaggeo.egu.eu)



Find out more

Discuss with your teacher or parents

What is sea-level rise and why would it increase in a warmer world?

How can humans limit the amount of greenhouse gases going into the atmosphere?

Why does planting trees help remove carbon dioxide from the atmosphere? What other measures can we take to extract greenhouse gases from the atmosphere?

Did you know that there is a group of children in the US who are taking their government to court for failing to protect them against global warming? Find out more at: egu.eu/270E2C.

This is a kids' version of the European Geosciences Union (EGU) press release 'Removing CQ, from the air required to safeguard children's future'. It was written by Bárbara Ferreira (EGU Media and Communications Manager), reviewed for scientific content by John Connolly (DCU School of History and Geography) and Aimée Slangen
(Researcher, NIOZ, Netherlands), and for educational content by Rachel Hay (Geography Teacher, George Heriot's
School, Edinburgh, UK). For more information check: http://www.egu.eu/education/planet-press/.



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Rising seas and erosion spell trouble for coral reefs

20 April 2017

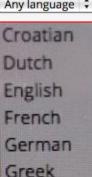
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[Read more]



Hungarian Italian

Polish

Portuguese

Russian

Serbian

Slovenian

Spanish

Swedish

Turkish



The coldest decade of the millennium

01 December 2016

The temperature at the surface of our planet is increasing and we are likely to experience warmer decades in the future. But if we go back in time, all the way to the 15th century, a different type of change in weather and climate resulted in the coldest decade of the millennium: the 1430s. [Read more]



Antarctic explorations 100 years ago tell us where sea ice was found

24 November 2016

During expeditions some 100 years ago, Antarctic explorers kept a ship's log book where they would write down observations, including about the weather and sea conditions. Modern day scientists have now used these records to learn where sea ice (frozen sea water) was found in the waters around Antarctica.

[Read more]



How are melting glaciers affecting people in Bolivia?

20 October 2016

Due to climate change, glaciers around the world are shrinking. Global temperatures are increasing, which causes the glaciers to melt more and more. Scientists in the UK and Bolivia have published a new study in The Cryosphere that used images from satellites to see how these glaciers are changing. [Read more]



Loss of Arctic sea ice affecting all polar bears

14 September 2016

In a new study, published in The Cryosphere and funded by NASA, researchers at the University of Washington have found that sea ice is now melting earlier in the spring and freezing later in the autumn across all regions of the Arctic where polar bears live. [Read more]



Using ocean and weather data to find MH370

27 July 2016

Eric Jansen, a researcher at the Euro-Mediterranean Center on Climate Change in Italy, and his team have used a computer model to find out where the Malaysian airlines MH370 plane might have crashed. [Read more]



Fire clues in cave dripwater

21 July 2016

Researchers in Australia and the UK have found that stalagmites and stalactites can be used to help trace past wildfires that burned above the cave. Fires change the chemistry of the water above ground, and these subtle changes leave traces in the stalactites and stalagmites that form when the water drips in the

caves underground. [Read more]



El glaciar y el lago gláciar de los Andes bolivianos (crédito: Simon Cook)

¿Cómo afecta el deshielo de los glaciares a la gente de Bolivia?

La cordillera de los Andes es el cordón montañoso más largo del mundo. Se extiende a lo largo de siete países de la costa oeste de América del Sur, uno de los cuales es Bolivia. En lo alto de las montañas, donde hace mucho frío, hay grandes cuerpos de hielo denominados glaciares que se forman cuando la nieve cae y se comprime por el peso de más nieve que sigue cayendo encima. Los glaciares se extienden por la ladera de la montaña y, por lo general, el extremo inferior del glaciar se derrite y se produce agua que abastece a los ríos. En La Paz y El Alto, dos de las ciudades más grandes de Bolivia, casi 2,3 millones de personas dependen en parte de esta agua de deshielo para beber, cultivar y generar energía.

Debido al cambio climático, los glaciares de todo el mundo están retrocediendo. La temperatura global está en aumento, lo que hace que los glaciares se derritan cada vez más. Los científicos en el Reino Unido y Bolivia han publicado un nuevo estudio en <u>The Cryosphere</u> en el que usaron imágenes satefitares para observar cómo cambian los glaciares. Descubrieron que los glaciares bolivianos se redujeron a casi la mitad de su tamaño entre 1986 y 2014. Según Simon Cook, el científico principal, esto significa que las comunidades que dependen de los glaciares tendrán más dificultades para acceder al agua en el futuro, ya que los glaciares siguen retrocediendo.

Además, a medida que el tamaño de los glaciares disminuye, es posible que el agua de deshielo genere lagos. Las avalanchas, los desprendimientos de roca y los terremotos (que suelen ocurrir en esa parte del mundo) pueden hacer que los lagos se desborden y esto puede causar daños en los pueblos cercanos. Simon afirma: «Es algo parecido a cuando alguien salta en una piscina: se crea una ola que se extiende a los lados de la piscina. Aquí, se trata de una avalancha de piedras o nieve que cae en el lago y envía agua hacia afuera y aguas abajo, y puede causar daño en los pueblos».

La investigación científica de este tipo contribuye a que la gente esté preparada para el impacto del deshielo de los glaciares de Bolivia. De esta forma, los científicos pueden ayudar a proteger a los pueblos cercanos y así salvar vidas.



Find out more

Conversa con tu docente o tus padres sobre lo siguiente:

¿Por qué la temperatura global está en aumento? ¿Dónde se ubica la cordillera de los Andes y por qué se forman glaciares allí? ¿Qué son las avalanchas, los desprendimientos de roca y los terremotos? ¿Qué otras cosas pueden verse con los satélites en la Tierra?

Este artículo es una versión para niños del artículo titulado 'Receding glaciers in Balivia Jeave communities at cisk' que publicó la European Geosciences Union (EGU). La autora del artículo es Sarah Connors (investigadora asaciada de Política Científica en la EGU), la revisión del contenido científico estuvo a cargo de Simon Cook (profesar en la Universidad Metropolitana de Manchester, Reino Unido) y Dirk Hoffmann (coordinador e investigador en el Instituto Baliviano de la Montaña), y la revisión del contenido educativo estuvo a cargo de Teresita Gravina (Liceo Dan Gnocchi, Maddalani, Italia). Traducción de Elisa López Schiaffino. Si desea más información, consulte el sitio web: http://www.egu.eu/education/planet-press/.





Many persons, not only from the Committee on Education of EGU, have given their time and energy to the preparation of this Workshop!

We all hope that you'll enjoy it and most of all that it will be useful in your teaching.

But we also expect something from you!

We would like to continue to offer teachers the opportunity to attend GIFT and similar workshops, but this depends upon us being able to show our sponsors that teachers have used the GIFT information and science didactics in their daily teaching, or as inspiration for new ways to teach science in their schools.

Therefore we ask you:

Therefore, we ask you

1. To fill in the evaluation forms as soon as possible and email them back to us

EGU GIFT WORKSHOP (Cape Town, South Africa, August 27-28, 2016)

EVALUATION FORM

to be emailed to Carlo Laj <<u>education@egu.eu</u>> and Friedrich Barnikel friedrich.barnikel@awg.musin.de

and Friedrich Barnikei irledrich.Darnikei wawg.musin.de										
NAME of the Teacher										
School name and address:										
Score (5 = very good, 0 = poor)	5	4	3	2	1	0				
What is your overall evaluation of the course?										
How would you rate the course with respect to its usefulness for your work?										
How would you rate the lectures?										
How would you rate the practical sessions?										
What are the main benefits that you will take from the course? How will you apply the skills/knowledge acquired during the course to your work?										
Do you plan to apply some of the GIFT 2016 educational material for your classe? If so, please specify which material and for which course (Geography, Science, Physics, other).										
Did the course meet your expectations? If not, why not?										
Which subjects/lectures did you find most useful?										
Were there any topics which you feel could have been covered in more detail, or which should have been added to the course?										

Were there any subject areas which you feel were unnecessary?

2. Make a presentation of your experience at GIFT to a group of your teaching colleagues sometime after you return from EGU

. Send us reports and photographs about how you have used the GIFT information in your classrooms.

And finally answer to the frequently asked question:

Can I come again to the GIFT workshop?

Every year, we welcome 10-15 % of teachers who have already attended GIFT in previous years.

These teachers are selected among those who have given us the reports!

But we have a problem for teachers coming from far away developing countries who cannot financially contribute to the air flight expenses.

I will explain on Friday how we can solve this problem for really exceptional teachers.

Enjoy the 2016 - GIFT Workshop!

The Committee on Education of EGU