



New EGU Science Communications Fellow

Edvard Glücksman will be working on GeoQ and assisting Bárbara Ferreira in developing media-related and science information communications

Edvard, a Swedish citizen, recently completed his doctorate (DPhil) at the University of Oxford, where his molecular biology project explored the [diversity and ecology of Apusozoa](#). He also takes an active interest in science policy and communication and spent three months at the UK Parliamentary Office of Science & Technology in London, where he researched and wrote a [parliamentary briefing on biodiversity offsetting](#), market-based conservation strategies.

Having also recently served as a Trans-Atlantic Junior Fellow at the Colorado-based El Pomar Foundation, Edvard maintains a keen interest in large-scale transatlantic policy issues. Further, he has recently been chosen to participate in the [Emerging Leaders in Environment and Energy Policy](#) network, a project hosted by the Atlantic Council of the United States.

Edvard's studies include an MSc degree from the University of Oxford as well as undergraduate degrees in Environmental Biology (BSc) from the University of St Andrews and Sociology/Psychology (BA) from McGill University.

If you have any questions for Edvard, he can be reached by phone at +49-(0)89-2180-6717 or by email at glucksman@egu.eu.



An earlier version of this article was published on the EGU blog

EGU in social media and new website icons

The EGU is proud to announce a new addition to its [website](#): a set of social media icons and a group of links to some of the Union's outreach products. The new icons are visible below the website's menu on the left-hand side of the page.

The social-media icons link to the various profiles of the Union on social media networks such as [Twitter](#), [Facebook](#), [Google+](#), [LinkedIn](#), and [YouTube](#). Users less familiar with these networking websites, can read more about them by clicking on 'What is this?'. Those who already have social media accounts are invited to follow EGU for Union's updates, information and geosciences-related news.

Website users can also access other communication and outreach products of the Union more easily, by clicking on the large icons below the social media links.

Two of these large icons give access to products that were already advertised through the Union's website. These are 'Imaggeo', which links to EGU's open-access geosciences image repository, and 'EGU TV', which gives access to General Assembly webstreaming and GIFT videos.

Finally, the website also features new links to GeoQ, and to the archive of the EGGS newsletter. 'GeoLog' links to the [official blog of the Union](#), which recently saw changes in content and design. The blog regularly provides information about the Union and its activities, particularly its General Assembly, posts about recent research in the geosciences, and weekly highlights of Imaggeo pictures.

An earlier version of this article was published on the EGU website

International Innovation interviews

two EGU Division Presidents

The magazine, a scientific dissemination resource in Europe, recently talked to Michael Kühn and Stefano Tinti

Interview with Michael Kühn

Boldly trying to push science for solutions to solve the energy problems of tomorrow, Michael Kühn, is studying new approaches where renewables play a vital role.

What were some of the motivating factors underpinning the establishment of the Division on Energy, Resources & the Environment?

The European Geosciences Union (EGU) brings together geoscientists from all over Europe and the rest of the world, covering all disciplines of Earth, planetary and space sciences. This level of geoscientific interdisciplinary approach is needed if we are to successfully tackle the challenges of the future.

One challenge for humankind, for example, is to provide adequate and reliable supplies of affordable energy and other resources, obtained in environmentally sustainable ways, which will be essential for economic prosperity, environmental quality and political stability around the world. The Division on Energy, Resources & the Environment (ERE) works towards being a leading forum for these kinds of topics and also serves to inform the European Commission on such matters. It is driven by the need for answers to the interwoven challenges of energy, resources and the environment.

As the President of the Division, what does your role involve?

The scientific activities of the EGU are organised through the divisions, encompassing all studies of the Earth and its environment. The management and administration of each division are the collective responsibility of the respective President and officers. The major task and responsibility is to provide a sub-programme for the General Assembly of the EGU. I also take an active part in the EGU publications, by personally contributing to the EGU journals and book series and by serving as a referee to increase the standard of these publications. In addition, I contribute to our newsletter and support the outreach and educational activities of the EGU. The focal point for all division presidents is to bring together scientists and foster discussion between them, especially during the annual General Assembly.

Could you take us through some of the Division's and your day-to-day activities?

The activities of the Division need to be seen less on a day-to-day basis, and more from year-to-year. We have a cycle of planning and organising that climaxes with the General Assembly every year.

However, to provide greater insight, I ensure that all relevant subjects within the ambit of the ERE are well represented.

With so many divisions at the European Geosciences Union, to what extent do you interact with the other departments? How does the Union maintain unity and harmony across such a broad range, all with their own individual requirements?

The Union is supposed to pursue scientific objectives exclusively. Through our divisions we promote cooperation and discussion in Europe among scientists concerned with studies of the Earth and its environment, as well as planetary and space sciences. We primarily use scientific assemblies, specifically our own annual General Assembly, as well as the promotion to the previously mentioned publications in order to achieve our objectives. It is the structure of the EGU which ensures optimal work. The Council, within which division presidents are members, is the highest decision making body in EGU, and is our platform for extensive discussion and cooperation across, and between, the divisions. Further support comes from seven Union-wide committees that report to the Council. However, the major focus for all of us is our annual General Assembly, which is the largest geoscientific meeting and discussion forum in Europe. Last year, we had more than 10,000 participants.

What types of energy does the Division's remit cover? As we move forward, what role are renewables going to have?

The planned programme for this year's General Assembly demands that the ERE cover wind and solar energy, in addition to geo-energy, geothermal energy and biomass. Furthermore, we will also study the topic of geological CO₂ storage, which is closely related to the use of fossil fuels.

In my view, renewables are going to have, or need to have, an outstanding role in the future. However, we scientists only provide the scientific basis to enable policy makers and the public to lead future directions. Unfortunately at the moment there are a lot of discussions going on which are not at all based on the required knowledge of natural science and engineering. I personally advocate that every idea and opportunity should be studied and tested. This is why we incorporate emerging topics into the ERE along the line.

In terms of Europe's resources, do we have sufficient stocks to continue utilising energy at our current rate for another 100 years? Is the situation as dire as the media portrays?

We certainly have enough energy resources for the next 100 years. However, we need to define and decide on a sustainable way, which takes into account the Earth's climate, the environment and the welfare of the world's population. Mankind has tried this with so called

'silver-bullets' a couple of times. In my opinion I don't think this will work. What we need are diverse solutions which are location-specific – both in terms of available georesources, as well as being culturally-compatible. The danger is that without a working climate policy, a massive re-investment in the coal sector appears rational, because only a minor fraction of worldwide coal resources have been fully exploited to date. Furthermore, the latter option would trigger a new dimension of dependence from Europe on energy imports.

[In what way does the work of the ERE assist energy policy makers and to what effect?](#)

The EGU runs a substantial outreach programme, which is supported by the different divisions, as well as our own. In general terms, the outreach programme and committee promotes geosciences. This includes engaging people, institutions, organisations – or other scientific unions – to make policy and decision makers aware of social problems related to geoscience. However, it is difficult to quantify the effect, because it isn't measurable.

[What benefits to researchers does the ERE offer? How closely do you work with researchers?](#)

We are working side by side with researchers – we are all researchers ourselves! This work is at the heart of the EGU, which is a research-driven Union. The ERE is an interdisciplinary division, and offers the specific benefit of combining knowledge from different areas of basic research.

Like the EGU, the ERE was founded in 2002. Within this framework, we are devoted to the promotion of geosciences and cooperation between scientists. We offer scientists our annual General Assembly and additional workshops, scientific meetings, topical conferences, short courses and summer schools. Importantly, we encourage the participation of young scientists in the affairs of the Union.

[Would you like to highlight some recent achievements facilitated by the ERE?](#)

Even in the face of growing challenges, the Division has showed a constant growth in recent years and is now very well established. This demonstrates that the topics we cover are of utmost importance.

[What plans for the future do you have for the Division, and to what extent is innovation at the centre of your strategy?](#)

Thus far I have helped the ERE to become an established division within the EGU, specifically focusing on the integration of geoscientific knowledge available within the entire Union. The increase of the number of sessions, the number of contributions and the number of participants at the annual EGU meeting will grow further within the coming years.

For the period of 2011–2013, for which I am again President, I will put my labour into the consolidation of ERE. My aim is to grow the Division into a notable group of experts, advising the council and the

general community to solve the problems of tomorrow with regard to the unsolved questions of energy, resources and the environment.

[Is there any other aspect of the Division that you would like to comment on?](#)

We need young and motivated scientists and engineers to engage with our work and to spread scientific knowledge. This is not only an issue for the Division but relates to the entire EGU. Ultimately, our goal is always the pursuit of scientific excellence.

www.egu.eu/inside-egu/divisions-and-present-officers/division-energy-resources-and-the-environment/home.html



Mud boiling in geothermal hot springs, Hveragerdi, Iceland. In 2009, roughly 84% of primary energy use in the country came from renewable sources; of these, 66% was from geothermal. (Image distributed by EGU under a Creative Commons licence via www.imaggeo.net. Credit: Ragnar Sigurdsson/Arctic-Images.com)

Interview with Stefano Tinti

Stefano Tinti, President of EGU Natural Hazards Division, details their important work and the Division's role in helping to protect Europe from the effects of natural disasters that occur in the region.

[Could you begin by offering an insight into your background and professional areas of expertise?](#)

I am Professor of Geophysics at University of Bologna, Italy, and my background is in seismology and in tsunami science. My first research papers dealt with the propagation of long ocean waves, such as tsunamis, and their interaction with harbours. Then I expanded to tsunamigenic earthquake sources, numerical modelling of tsunamis, inversion techniques, and tsunami early warning.

[Furthermore, are you actively engaged in research yourself, and if so, what are you studying?](#)

I am involved in research on tsunamis. This has been my main field of research in recent years, with my main focus on numerical modelling, tsunami hazard and risk assessment for the European coasts, and on local and regional early warning systems.

How would you explain the mission of your Division and what specific issues it addresses?

In principle, the mission of the Division of Natural Hazards is the same as all other divisions of EGU: to provide a forum at European level to all experts in the field, to exchange ideas, to discuss methods and results, to present theories and observations, and to focus on knowledge gaps.

However, there is a specific feature that makes the Division unique. Natural Hazards are 'natural' phenomena that become a 'hazard' because they impact on society and/or on the environment. Therefore, one essential element of this Division is interest in the societal aspects of natural processes, which means that the actors here are not only researchers covering basic and applied science, but also all those subjects involved in civil protection activities, including management of critical emergencies and hazard mitigation.

Why are we concerned about natural hazards? If they are naturally occurring, what can we do to counter their impact? Would you talk us through some of the Division methods and approaches?

There are two time scales when we apply countermeasures, in the short term and in the long term. Long term mainly implies prevention, which is devising and implementing policies and strategies to reduce the impact of natural catastrophes. This involves a strong cooperation between scientists and policy makers, and investing in resources now to gain an advantage in the future.

The short term concerns the time where the natural process is ongoing, or just ended, requiring real time monitoring, forecast, warning, rescue, humanitarian assistance.

Regarding the second part of the question, I can tell you that an EGU division has no specific methods or approaches. It is not an operational body or a research institution. It is a forum offered to all scientists involved in research in geosciences who have special sensitivity to those natural processes that can have impact on the society, and that like to discuss these topics openly.

All scientists active in the Division share the belief that science is a means to help our societies to develop 'correctly' in the physical environment. This belief inspires the selection of the problems to study, the objectives of the research, as well as the way the results are communicated.

To what extent does your Division and its work leverage effort and activity to support researchers?

Our Division is part of the EGU and works at a European level. The annual General Assembly (GA) of the EGU is the most important event in Geosciences in Europe, involving more than 10,000 participants not only from Europe, but from around the world.

Traditionally, Natural Hazards is one of the largest divisions of EGU, and is, in turn, structured into many subdivisions, and organising tens of symposia. Nowadays the event is considered a classical appointment for researchers. Moreover, EGU provides support for other symposia and conferences during the year on specific topics.

One example is the Plinius Conference series, a thematic series of meetings on storms in the Mediterranean that reached the 13th edition in 2011, and which falls within the frame of the Natural Hazards Division.

Furthermore, EGU has established a number of awards for young scientists who have shown themselves to be outstanding in their field of research.

It is important to understand that atmospheric hazards can trigger geologic hazards, and geologic hazards can trigger other hazards. Could you offer an example of this? Is this something that is increasing as the lines blur between what are 'natural' and what are a 'human-induced' hazards?

The processes that lead to hazards are quite complex and are strongly interrelated, which has the subsequent implication that they have to be studied with a multidisciplinary approach. The chain of interdependency is very interesting and also very common, therefore it is not difficult to provide examples. Think of intense rain associated with storms that can cause diffuse landslides, river flooding, and violent sea waves. The storm is the primary hazard, then landslides, floods and storm waves are the secondary hazards. But floods can also be generated by the obstruction of a river by a landslide, and therefore can be a hazard of third level.

Another example is a submarine earthquake that can provoke a tsunami, or which can induce a submarine landslide, in turn causing a tsunami. A further example can be a large volcanic explosion that, in addition to local damage, can be hazardous for air navigation up to hundreds of kilometres away from the volcano.

As for the aspect of contiguity between natural and human-induced hazards, I can state that, in a sense, it is connatural to the concept of natural hazard itself. As I said before, a natural process is not a hazard per se; it is only a hazard as a consequence of the potential impact on the society. Building houses on the slope of a volcano is a bad example of land management that increases the consequences of a possible eruption, much as building industrial plants in areas that are exposed to natural hazards is not a clever idea.

Everybody has in mind the impact of the 11 March 2011 tsunami on the nuclear power plant of Fukushima on the coast of Japan. The tsunami was disastrous, killing more than 20,000 people (if we include even missing persons in the count), but the impact was amplified by the nuclear accident in the plant that was not protected adequately from tsunami waves.

Does the Division cover the full gamut of natural hazards? Are there new and emerging natural hazards coming into play as a result of climate change and human activity?

In principle yes, but in practice not all of them are represented in the way we wish. The main hazards covered are hydro-meteorological hazards, volcanic hazards, landslides, earthquakes, tsunamis and other ocean and coastal hazards, snow avalanches, and forest fires.

We reserve a subdivision to cover all other hazards, mainly biological and environmental. In the GA of 2012 we will, for example, touch

on the problem of hazard related to sinkholes – a special kind of geologic hazard that is usually not so widely discussed, but which deserves attention. However, I would like to extend the interest to other fields like desertification, droughts, lightening, etc. that are not satisfactorily covered.

I would not say that there are new natural hazards; I would say that there are more territories and more people exposed to hazards, and therefore it becomes ever more important to find countermeasures to natural hazards and to get to a new culture of societal development. As for climate change, this is the specific focus of an EGU Division called Climate: Past, Present and Future, which is concerned with climate variability and consequences, for instance, sea-level rise, which has the potential to increase the vulnerability of low-land coasts, and the observed increase in the frequency of high-energy atmosphere storms, which poses serious problems for many places that are unprepared to cope with them.



Natural hazards, such as landslides, often cause damage to human property and loss of lives. The picture shows a house damaged by a mud flow in the Buzau County, Romania. (Image distributed by EGU under a Creative Commons licence via www.imaggeo.net. Credit: Raluca-Mihaela Maftei)

Further to this, are there particular fields of research that you expect to gain prominence in the field of natural hazards in the future?

On one hand, modern society has proven to be very vulnerable to natural hazards, especially at the level of structures and infrastructures. On the other, modern society is increasingly based on the fast transmission of huge quantities of data and information.

My feeling is that one of the priorities that future research and technology should address is the development of more sophisticated systems of real-time monitoring and forecasting. As we move towards integrated and complex global systems of monitoring of the Earth: the ocean, the atmosphere, the land, we should also move towards integrated systems of forecast and warning.

Weather forecasting is already an operational routine, and river flooding forecasts are also implemented in several countries, but we should aim at improving the prediction quality and at extending the forecasting to many other fields, such as forest fires, landslides, and tsunamis – though each of these has its own specificity.

Where prediction is impossible at the today's level of experience, such as for earthquakes, the goal is to progress in the development of warning systems – which are currently capable of detecting a quake within a few seconds, and launch an automatic alert before the arrival of the S waves in the target place – and of techniques for the almost real-time determination of earthquake parameters.

In light of the recent forest fires in Australia, and the flooding in Bangladesh, natural hazards are taking many lives. If they are exacerbated by reduced resource-availability and people living in high-risk areas, such as on flood plains, how can this be tackled when our global population is growing?

This is a serious problem. Your examples are not taken from Europe, but we can add more examples also from Europe of the impact of natural phenomena that is worsened by bad practices. In a sense, there is always a problem of lack of resources behind any major disaster, in both poor and developed countries.

The gap is more cultural than technological. To reinforce buildings in such a way to make them resistant to earthquakes may require a huge amount of money. This is certainly the case in Italy, my country, where most of the territory is classed as seismic and where most of the old houses would be severely damaged or destroyed by a strong earthquake. Yet, private and public investments for prevention are hard to find, since there is always some other goal that gains priority. History teaches us that serious action is only taken after disasters have occurred, even with recent events. It seems that, though it is proven that prevent actions are more efficient and less costly, the general practice has, too often, been to act only in the post-disaster phase.

Finally, besides the direct impacts of natural hazards, such as a flood destroying a house, there are usually many indirect impacts, such as the spread of disease for weeks after the initial destruction. These indirect impacts can threaten more lives and add years to the recovery time from a disaster. Is this an area which the Division also considers, and in what capacity?

There is a subdivision of NH called Natural Hazards and Society. It is mainly here that these aspects, including the evaluation of the total cost of a disaster and resilience, are handled. Furthermore, it is here that geoscientists have to work hand-in-hand with all the other actors. This is a specific feature of our Division within EGU.

<http://www.egu.eu/inside-egu/divisions-andpresent-officers/division-natural-hazards/home.html>

Interviews (except images) reproduced with permission from [International Innovation](#). This leading global dissemination publication provides unique access to bespoke interviews, content and presentations for the wider scientific, technology and research communities. EGU members can subscribe free to this resource [here](#).