



Geneva Brass Quintet
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Scientific Concert

6 research megaprojects
set to music by the
Geneva Brass Quintet

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Context

In 2010, the European Union launched a contest aimed at delivering 1 billion euros to a research project (FET Flagship Initiatives). After a first selection among 26 projects submitted, 6 are still competing. The winner will be nominated at the beginning of February 2013.

All projects are absolutely fascinating and will extend the horizons of science. Their themes are: sensors, the brain, simulations, virtual avatars, robots and graphene.

Project description

The idea is to set these 6 scientific projects to music during a concert. There will be 6 scenes, one for each project.

Every scene will be opened by Daniel Saraga, a science journalist, who will describe the scientific project. The project will then be set to music by the “Geneva Brass Quintet” (2 trumpets, horn, trombone and tuba). The music chosen for each scene reflects the scientific content of each project.

Each scene will last more or less 15 minutes, with 5 minutes allocated to the project description and 10 minutes to music. The concert will thus last approximately 2 hours, intermission included.

This event, at the border between music and science, will enable scientists and the general public to meet and dialogue. With the help of music, the major scientific projects of the 21st century will become concrete for the general public.

Scientific and musical program

Prelude: small introduction by the Geneva Brass Quintet.

1st scene

<u>Scientific Project</u> :	FuturICT Steven Bishop, University College London, UK Dirk Helbing, EPFZ, Switzerland
<u>Description</u> :	Analyse all socio-economic data available on the Internet to simulate and prevent crises.
<u>Music</u> :	Violin concert in A minor, BWV 1041 Johann Sebastian Bach (1685-1750), arranged by Michel Torreilles
<u>Description</u> :	For this highly mathematical project, we have chosen the most mathematical of composers: Johann Sebastian Bach. This piece, the complete structure of which can be mathematically analysed, showcases the intrinsic power of mathematics to get extraordinary compositions when associated with the genius of Bach or to predict future crises when associated with the talent of FuturICT project's researchers.

2nd scene

<u>Scientific Project</u> :	Human Brain Project Henry Markram, EPFL, Switzerland
<u>Description</u> :	Simulate a human brain on a computer at the microscopic scale.
<u>Music</u> :	Four Sketches Anthony Plog (*1947)
<u>Description</u> :	This piece is based on sonic cells that propagate and enrich themselves throughout the four movements of the piece, like the transmission of electrical signals in the brain. In four very contrasting, yet connected by a sound unity, parts this piece perfectly illustrates the complexity and beauty of the human brain.

3rd scene

- Scientific Project : IT Future of Medecine
Hans Lehrach, Max Planck Institute for Molecular Genetics, Berlin,
Germany
- Description : Create a computer model of patients and diseases.
- Music : Eleven Chorale Preludes Op. 122
Johannes Brahms (1833-1897), arranged by Ralph Sauer
- Description : This piece, based on Lutheran chorals, is considered Brahms' last masterpiece. The choral themes swing between death, healing and hope : "O Welt, ich muss dich lassen", "Herzlich tut mich verlangen", "Mein Jesu, der du mich" and are completely in phase with the objectives of the IT Future of Medecine project.

4th scene

- Scientific Project : Graphene
Jari Kinaret, Chalmers University of Technology, Sweden
- Description : Develop flexible and transparent graphene-based chips.
- Music : Encyclopédie de l'Opéra
Kurt Sturzenegger (*1949)
- Description : Graphene is a material which gathers a lot of qualities. This encyclopaedia of the opera gathers some of the most famous excerpts of operas. You will hear the lightness of the Toreador Air from Carmen, the solidity of the Ride of the Valkyries from Wagner, as well as the fineness of Rossini in the Barber of Sevilla. Lightness, solidity, fineness : three of the main properties of graphene.

5th scene

Scientific Project : Guardian Angels
Adrian Ionescu, EPFL, Switzerland
Christofer Hierold, EPFZ, Switzerland

Description : Manufacture low-energy sensors to track our movements.

Music : Guardian Angels
Ludovic Neurohr (*1983), creation, composed for the occasion.

Description : For Guardian Angels, a new composition was commissioned to the young and talented Swiss composer Ludovic Neurohr. This piece is inspired by the issues of the Guardian Angels' project. This piece's world premiere will be on the occasion of this concert.

6th scene

Scientific Project : RoboCom
Paolo Dario, Scuola Superiore Sant'Anna, Italy

Description : Develop robots to assist humans.

Music : Suite from Nutcracker
Piotr Illitch Tchaikovsky (1840-1893), arranged by Peter Lawrence

Description : Composed at a time when robots did not exist yet, Tchaikovsky set to music the history of a nutcracker and a whole range of toys coming to life, first in a slightly mechanical way (in the March of the Toys) and then as fully-fledged characters. As for the future of robots?

Participants

Geneva Brass Quintet

Established in 2001, the Geneva Brass Quintet is a chamber music group of Swiss musicians. After studying at the Geneva Conservatory, they all graduated with a Master of Music. Eager to create a close-knit musical unit and being particularly attracted to chamber music, they formed the 'Geneva Brass Quintet' (GBQ) with the aim of sharing their passion with the public.

Well-known in Switzerland, the GBQ has already performed at the Sion Festival, St-Germain concerts in Geneva and the "Guilde romande de la musique de chambre" (French-speaking Chamber Music Guild), as well as at prestigious venues such as the Victoria Hall and Saint Peter's Cathedral in Geneva. The Geneva Brass Quintet regularly plays for various Swiss radios and has also been invited many times to the Espace 2 (Swiss radio) "Schubertiades".

In 2008, the GBQ started an international career with an extensive tour in South Africa. After this, they received an invitation to the festival "Cuivres en Dombes" and to the Mègève festival and embarked on another extensive tour in China and a concert in Dubaï in 2011. Other projects are emerging in Latin America and Asia.

The first GBQ CD, "Brass@ge", released by VDE Gallo, received excellent reviews in Switzerland and abroad. For its 10th anniversary, the GBQ is preparing a second CD along with other musicians : panflute, organ, soprano and choir. Indeed, in addition to numerous recitals, the group opens up to fruitful collaborations, many of which have already been noticed : series of concerts with the Sinfonietta of Lausanne, the Polhymnia choir or the Wind Band of Lausanne.

The GBQ repertoire is extremely eclectic in style and period. It also emphasises Swiss composers, many of whom have written pieces specifically for the GBQ.

Finally, each year in early February, the GBQ organises the Geneva Brass Festival, an international event dedicated to brass which takes place in Geneva.

GBQ members are :

Samuel Gaille et Lionel Walter,
trumpets

Christophe Sturzenegger, horn

David Rey, trombone

Eric Rey, tuba



Daniel Saraga, presenter

A science journalist, Daniel Saraga has been writing for LargeNetwork's clients since 2006. He is managing editor of Reflex and covers science, finance and society topics for Swissquote Magazine, L'Hebdo and PME Magazine.

He holds a PhD in physics and has worked on quantum computers. He has founded a cycle of meetings between researchers and the public at the University of Basel as well as a science workshops programme for children. He has also worked as a pedagogical consultant for the House of Elsewhere and the Olympic Museum.

He has coordinated Reflex's special issue on Flagship projects published in October 2011.

Ludovic Neurohr, composer

Born in 1983 in Sion, Ludovic Neurohr comes from Grône, in Valais. He started playing the cornet at a young age with his village brass band the "Marcelline" and studied under Géo-Pierre Moren from 1995 to 2002.

On numerous occasions he has won prizes during cantonal and national solo contests and became Swiss Junior cornet champion and overall Swiss Junior champion playing Flugel Horn in 2003. From 2001 to 2005, he was repiano cornet with Brass Band 13*, with whom he won many contests.

He studied music at the "Tibor Varga" music academy in Sion in the class of Claude-Alain Barmaz from 2003, with the aim of obtaining a teaching trumpet diploma. This aim was achieved with top marks in 2007 when he also obtained his professional diploma in theory of music. He also studied the piano for three years, as well as orchestration and chamber music.

In September 2007 Ludovic Neurohr widened his musical background by studying composition in Manchester, England, at the famous school of Media, Music & Performance of Salford University. He obtained a Masters with distinction in October 2008. He had the chance of studying film music, popular music and Brass Bands with Dr Robin Dewhurst, Dr Alan Williams, Dr Tim Warner and Professor Peter Graham. He also had the opportunity of working with Professor David King and the Australian National Bass Band.

During his Masters degree, Ludovic Neurohr won the "Kirklees Composer Contest 2009", which enabled him to work with the publishers of the same name based in Brighouse, Yorkshire.

In April 2009 in Ostend, Belgium, Ludovic won the second prize in the "European composer Contest", linked to the European Brass Band Championships. His piece, "Whirl", received excellent critics from the jury composed of Jan van der Rosst, Ray Farr and Rob Goorhuis, who described the composition as innovative and very original.

Ludovic's music, which has been played in different contests, has always had great success topped with congratulations from well-known names such as Frank Renton, David King, Alan Williams and Gary Cutt. In 2010, Ludovic Neurohr recorded his first CD with the "Ensemble de Cuivres Valaisan". This Brass Band, Swiss champion in 2011, has recorded pieces from two young and talented composers Julien Roh and Ludovic Neurohr on a double CD.

Ludovic Neurohr is currently working on various projects with groups in Australia, Portugal and Switzerland.

Lionel Walter, trumpet player and mathematician, project coordinator

Lionel Walter was born in 1981 in Morges (VD). At a very young age, he begins playing the cornet, then the trumpet, and grows up in the Swiss brass band scene. He has always been attracted to music and science and graduated with a Master of Science in Mathematics from the EPFL (Swiss Institute of Technology) in 2005 and a Master of Music in Orchestra Performance with honours at the Geneva University of Music in the class of Gérard Métrailler in 2007. Lionel Walter has also studied abroad, notably in Pittsburgh (USA) with Anthony Pasquarelli and Roger Sherman and at the Universität der Künste in Berlin with Konradin Groth.

Since then, his life evolves around his two passions. One part dedicated to science as a scientific collaborator of the EPFL library since 2006. The other dedicated to music. Since 2006, he has been a member of the Geneva Brass Quintet. He also performs as an extra-player with the major symphonic orchestras of Western Switzerland and is an active freelance musician. Additionally, he is a member of the board of the Swiss Brass Band Association.

Links

The European Union initiative « Flagship projects »:

<http://cordis.europa.eu/fp7/ict/programme/fet/flagship/>

The projects :

- FuturICT : <http://www.futurict.eu/>
- Graphene: <http://www.graphene-flagship.eu/>
- Guardian Angels : <http://www.ga-project.eu/>
- Human Brain Project : <http://www.humanbrainproject.eu/>
- IT Future of Medicine : <http://www.itfom.eu/>
- RoboCom : <http://www.robotcompanions.eu/>

Participants :

- Geneva Brass Quintet : <http://www.gbq.ch>
- Daniel Saraga :
<http://www.largenetwork.ch/en/about/team/daniel-saraga>
- Ludovic Neurohr : <http://www.ludovicneurohr.com/>

Various

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With the kind authorization of LargeNetwork, this document contains excerpts on the flagship projects from the Reflex Magazine special issue.

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