Northern Ireland Assembly

Research and Information Service Briefing Note

Paper 03/13 09 January 2013 NIAR 951-2012

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The University of Geneva and CERN

1 Introduction

The following paper provides information on the University of Geneva (UNIGE) and the links it has developed with CERN.

2 The University of Geneva

The University of Geneva was founded in 1559 and is a leading university in the sciences and research, specialising in topics including molecular biology, astrophysics, social sciences and economics.[1]

UNIGE has a student body of 14,500 students. Of these, more than one-third of all students come from abroad. The academic year is divided into two semesters, beginning mid-September and ending mid-June.

The University has the following faculties:

- Faculty of Science;
- Faculty of Medicine;

[1] University of Geneva, http://www.unige.ch/international/pguoigeneve/excellence_en.html

- Faculty of Arts;
- Faculty of Economics and Social Sciences;
- Faculty of Law;
- Autonomous Faculty of Protestant Theology;
- Faculty of Psychology and Educational Sciences; and
- Faculty of Translation and Interpretation.

Of these, the faculty of Economics and Social Sciences and the faculty of Science are the largest with 23.5% and 15% of students enrolled (respectively) on their courses.[2]

The University of Geneva has been listed as one of the top 12 research universities in Europe. For example, the Faculty of Sciences has had a number of notable achievements, including:[3]

- Birthplace of CERN;
- Pioneer in genetics;
- The first to discover extrasolar planets; and
- Host to two National Centres of Competence in Research (NCCRs).

2.1 Research at UNIGE

As with the Queen's University Belfast (QUB) and the University of Ulster (UU), the UNIGE has an extensive research programme, with a large number of research areas, from Astronomy to Statistics.

The University has an extensive research network with scientists at UNIGE working closely with researchers at UNEP (United Nations Environment), CERN (European Laboratory for Physical particles), ESO (European Organization for Research in Astronomy), ESA (European Space Agency) and NASA.

The University also hosts six Research Centres of Excellence, four of which were developed by UNIGE:[4]

- Frontiers in Genetics;
- MaNEP (materials with novel electronic properties, see below);
- Affective Sciences (study of emotions);
- Chemical biology;
- LIVES (overcoming social vulnerabilities – in association with the University of Lausanne and the Ecole Polytechnique Federale de Lausanne); and
- Synaptic bases of mental illness (in association with the University of Lausanne and the Ecole Polytechnique Federale de Lausanne).

[2] University of Geneva, Bureau of Statistics, http://www.unige.ch/dadm/stat/index.html
[3] University of Geneva, Faculty of Science, http://www.unige.ch/sciences/Enseignements_en.html
[4] University of Geneva, Centers and areas of excellence http://www.unige.ch/collaborateurs/recherche/profil/centres.html

UNIGE also operates a technology transfer office - UNITEC (in a similar manner to QUB and UU). In 2006, UNITEC managed a portfolio of over 150 different technologies and negotiated 49 significant collaboration and licensing deals.[5]

UNITEC provides a number of services including:

- Review invention disclosures and help evaluate their legal protectability and their commercial appeal;
- Find appropriate industrial contacts for collaborations or licensing;
- Support researchers during negotiations of research collaborations and licensing of technology; and
- Encourage the creation of spin-offs.

Some of the spin-off technologies developed via UNITEC since 2000 include cancer treatments, quantum cryptography and Nano level marking for anti-counterfeiting.[6]

3 Links with CERN

As mentioned above, the University of Geneva has a number of links and projects it operates alongside CERN. These include a number of projects, including promoting science in education to research into particle physics.

Some of these projects include:

- 'Be a scientist for a day': designed to introduce schoolchildren (aged 9-12) to the methods of experimental science by inviting them to identify the contents of unopened boxes. They had to come up with hypotheses, carry out experiments, and then interpret their results;
- The Nuclear and Particle Physics Department is heavily involved in projects at CERN, including ATLAS, HARP (an experiment at CERN and R&D towards the development of a neutrino factory) and WA98 (heavy ion experiment);[7]
- MaNEP, the Applied Superconductor group, is based at the University of Geneva. It works with a number of institutions in the development of new superconducting materials, including CERN.[8] The research of the Applied Superconducting Group centres on the development of superconducting wires for compact magnetic resonance magnets and the development of both low- and high-Tc superconducting materials for high-fields applications; and
- Citizen Cyberscience Centre Project: Citizen Cyberscience provides scientists with an inexpensive form of distributed computing power that is complementary to Grid technology. The project, a collaboration between UNIGE, CERN and the United Nations Institute for Training and Research (UNITAR), is designed to provide a

[5] University of Geneva, UNITEC, http://www.unige.ch/collaborateurs/recherche/profil/centres.html
[6] Ibid
[7] University of Geneva, Co-operation,www.unige.ch%2Fcollaborateurs%2Frecherche%2Fcooperations-1.html
[8] MaNEP, http://dpmc.unige.ch/gr_flukiger/

sustainable framework to disseminate the technological know-how needed to exploit Citizen Cyberscience more widely in developing regions, for both fundamental science and humanitarian applications.[9]

[9] United Nations Institute for Training and Research http://www.unitar.org/unitar-unige-and-cern-collaborate-citizen-cyberscience-centre

Appendix 1: Contacts at the University of Geneva

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