# **University of Genova**

Name of the organisation :	Università degli Studi di Genova, Dipartimento di Matematica
Address:	via Dodecaneso 35, 16146 Genova
Tel:	+39 010 2099221
Web site:	www.unige.it
Name of the contact person :	Anna Siri
Function:	Project Manager
Address:	via Dodecaneso 35, 16146 Genova
Tel:	+39 010 3536949
E-mail:	anna.siri@unige.it
Type of organisation:	
SME □ Schoo Training □ No Profit	I □ University x Public Authority □ □ NGO □
Other (Specify)	
Fields of action :	
SMEs □ Equal opportunities □	Youth x Universities x Public Authorities $\square$ Schools x Unemployed $\square$
Other (Specify)	

### **Description of the organisation**

The University of Genova (UNIGE) is one of the most ancient of the European large universities; with about 280 educational paths distributed in the headquarters in Genova and the learning centres of Imperia, Savona and La Spezia, it comes up to the community as a well-established reality throughout the region.

More than 1.300 faculty members are distributed over 5 Schools (Math, Physics and Natural Sciences, Medical Sciences, Polytechnic, Social Sciences, Humanities). With its 126 Degrees, more than 55 Postgraduate Schools, and 26 Masters, UNIGE provides a truly multi-disciplinary teaching offer to more than 30.000 students, and nearly 2.800 international students. UNIGE counts 22 Departments, 27 PhD courses, 55 Specialisation Schools, an Integrated Library System, 11 Research Centres, and 2 Centres of Excellence. UNIGE took part to more than seventy FP7/H2020 projects as either participant or coordinator. The existing international cooperation concerns the fields of research and didactics, with many scientific bilateral and multilateral agreements and European Union projects.

Specifically, the Department of Mathematics (DIMA) is a dynamic Department and a driving force for the entire University. DIMA is very active in both education and research activities. DIMA offers bachelor courses (3 years) and master courses (2 years) along with PhD programs.

DIMA offers two graduate programmes leading to the Ph.D. degree, that combines study and research opportunities. DIMA is very active in both education and research activities. DIMA has a fundamental rule in the harmonization of the theoretical and practical application of teaching Mathematics at School (subject pedagogy and practical training), and in the realization of students' pedagogical activities with differentiation.

DIMA also participates to several national, international and EU projects.

For more information see: http://www.dima.unige.it

#### Experience of the organization in previous European projects

UNIGE has a strong participation in the most important EU and international research and cooperation Programs. Discoveries, inventions, advances achieved by research activities are successfully commercialized.

UNIGE is currently involved in over 68 projects funded under FESR-Interreg, LIFE (25 projects since 1999) and other international funding instruments and has over 116 projects in FP7 and 39 active projects under H2020 (7 of which are Marie Curie Actions - 2 Rise, 2 ITN and 1 Night).

More information is available at the following link: https://unige.it/ricerca/prog\_euint/index.shtml.

DIMA provides a good starting point for young scholars in the field to build and nurture individual international networks. The Department participates to several regional, national (n. 10 PRIN - projects of national interest; 1 FIRB Future in Reasearch), and international and European research programmes (1 FP2-ESPRIT; 1 FP5-IST; 1 FP7-SPACE, 2 FP7-PEOPLE, 1 Marie Skłodowska-Curie-IF action) and thematic networks (INDAM research programmes).

DIMA is currently involved in several European projects such as H2020-FETOPEN-2015-CSA (SC-square - Satisfiability Checking and Symbolic Computation: uniting two communities to solve real problems); H2020-PROTEC-2014 (Flare Likelihood and Region Eruption Forecasting); programme of international mobility: H2020-MSCA-COFUND-2015 Proposal: 713485 -INdAM-DP-COFUND-2015.

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# Experience and Expertise of the organization in the project's subject area

In 2004 the Italian Ministry for Instruction, University and Research (MIUR) founded the national Project "Lauree Scientifiche" ("Scientific degrees") (PLS in the following), whose aim was fostering the enrolment in university courses with scientific orientation, stimulating young people's interest in studying sciences and providing a better education in the base sciences. The project had several strands, going from special interventions for "high-achieving students" to pre-university orientation programs. Among them, the so-called PLS Laboratories, that is to say special lessons, performed in the school environment through a collaborative work between university researchers and school teachers.

UNIGE has also a long experience of distance learning activities. UNIGE is a partner of eduopen.org, a platform created by 14 Italian public universities to offer everyone free of charge the opportunity to follow high-quality training online courses. EduOpen is an innovative educational opportunity accessible to everyone, from young people to retirees, from professionals to teachers. All UNIGE distance education instructors have a long experience in higher education teaching and research in their field of expertise. Moreover, they were trained in using synchronous and asynchronous distance education tools, preparing and organizing distance education material, activities and communication.

# Contributions that can be provided to the project

UNIGE will carry out all tasks that were initially assigned to the previous partner USR Liguria, in particular:

- The assessment of the results for the first intellectual output "STEM teaching package"
- The testing activities related to the first intellectual output "STEM teaching package"
- Contribution to the development of the contents for the second intellectual output "Manual for Innovative Pedagogy in STEM Contents"

The Math's Department will also contribute to all transversal activities such as dissemination, exploitation, quality and monitoring.

#### Reasons of involvement in the project

UNIGE team has historically strongly prioritised third level education, also improving the support for research training, with the aim at always pursuing the highest standards.

Due to changes in political and social characteristics in Europe, the topic of quality of education has received special attention in UNIGE. The year 2001 marked the beginning of a new system of accreditation for university degree programs.

Anna Siri has a strong experience in evaluation of educational process and systems and she has been responsible at a senior level in their institution for educational policy and processes. Emanuela De Negri and Francesca Morselli are high level experts in math's area and in school teacher training. They have experience with the development and implementation of study programs.

All are involved in national and international research and teaching projects aimed to enhance high quality in science degree programs.

UNIGE staff ensure also "complementary practical skills", comprised for example communication techniques, awareness of cultural differences, interview techniques, knowledge about how to write reports evidence based, analytical skills and competences to accurately analyse strengths and weaknesses of the study programs under review.

# **Contact Person's Experience and Expertise**

#### Anna Siri

Sociologist, PhD in Evaluation of Educational Processes and Systems. In July 2017, she held the habilitation as Associate Professor in Sociology according to the Italian National Scientific Habilitation Procedure (ASN 2016-2018). Her main fields of work are international comparative studies in education. Her research areas of interest include the measurement and determinants of instruction, how educational innovations impact instruction, and how instruction affects student learning. She has published many articles and reports related to assessment and evaluation, quality assurance and institutional effectiveness, and she has actively participated in paper presentations and symposiums at major research association meetings.

She has many years of experience as a project manager and scientific writer.

For more information see: http://cattedraunesco.unige.it

#### Emanuela De Negri

Associate Professor in Commutative Algebra at University of Genoa, Department of mathematics. She has more than 20 years' experience of teaching and in supervising school and university teachers. Since 2001 she is member of the Orientation Commission of the Degree in Mathematics. Since 2004 she is involved in "Piano Lauree Scientifiche", a project supported by Italian Government to improve the teaching of Mathematics in the school.

#### Francesca Morselli

Francesca Morselli graduated in Mathematics at the University of Genoa (2002) and obtained her Ph.D. in Mathematics at the University of Turin (2007). Since 2015 she is associate professor of Mathematics Education at the Department of Mathematics of the University of Genova (Italy), where she works in pre-service and in-service teacher education programs. Her research focuses on: argumentation and proof in mathematics; formative assessment in mathematics classroom; the interaction between affective and cognitive factors in the teaching and learning of mathematics.