

SCIENTIFIC DISCIPLINARY AREA: MATHEMATICS AND INFORMATICS
---

**RESEARCH PROGRAM NO. 1**

**The assessment criteria for the qualifications and the interview will be affixed on 28.10.2016 at 10.00** in Dipartimento di Matematica (DIMA), Via Dodecaneso 35, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 28.10.2016 at 13.00** in Dipartimento di Matematica (DIMA), Via Dodecaneso 35, Genova

**The interview will be held on 28.10.2016 at 15.00** in Dipartimento di Matematica (DIMA), Via Dodecaneso 35, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

*As regards candidates, who are not resident or domiciled in Italy, and those, who are resident or habitually domiciled at a distance of more than 300 Km from the selection centre, the interview, if requested, can also be held by electronic means (SKYPE video conference call), promptly contacting Prof. Michele Piana on the phone number +39 010 3536939 or via the email address: [piana@dim.unige.it](mailto:piana@dim.unige.it)*

**Scientific coordinator:** Prof. Michele PIANA

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 27.133,00**

**Title:** Formulation of computational methods for the analysis and classification of time series acquired by SDO/HMI satellite and implementation of the FLARECAST technological platform.

**Description:** The FLARECAST project (Research and Innovation Action in the H2020-PROTEC-2014 call) aims at constructing a technological platform for the prediction of solar flares by using data acquired by the Helioseismic and Magnetic Imager on-board the Solar Dynamics Observatory (SDO/HMI). This position is opened in order to develop methods for the analysis of time series acquired by SDO/HMI and their validation for the prediction of solar flares.

An important task will be concerned with the management of the interface between the developed algorithms and the technological pipeline built up at the Institute for 4D Technologies, Fachhochschule Nordwestschweiz, Windisch, Switzerland.

**Scientific disciplinary sector:** MAT/08 NUMERICAL ANALYSIS

**Place** Dipartimento di Matematica (DIMA)

**Required degree:**

Dottorato di ricerca in Matematica o in Fisica o in Informatica o in materie affini

**Subjects of the interview:**

Knowledge of the main feature extraction techniques and both supervised and non-supervised machine learning techniques; competence in code implementation in advanced technology platform.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 2**

**The assessment criteria for the qualifications and the interview will be affixed on 28.10.2016 at 11.00** in Dipartimento di Matematica (DIMA), Via Dodecaneso 35, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 28.10.2016 at 14.00** in Dipartimento di Matematica (DIMA), Via Dodecaneso 35, Genova

**The interview will be held on 28.10.2016 at 17.00** in Dipartimento di Matematica (DIMA), Via Dodecaneso 35, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

*As regards candidates, who are not resident or domiciled in Italy, and those, who are resident or habitually domiciled at a distance of more than 300 Km from the selection centre, the interview, if requested, can also be held by electronic means (SKYPE video conference call), promptly contacting Prof. Michele Piana on the phone number +39 010 3536939 or via the email address [piana@dima.unige.it](mailto:piana@dima.unige.it)*

**Scientific coordinator:** Prof. Michele PIANA

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Regularization methods for the prediction of solar flares and implementation of the FLARECAST technological platform.

**Description:** The FLARECAST project (Research and Innovation Action in the H2020-PROTEC-2014 call) aims at constructing a technological platform for the prediction of solar flares by using data acquired by the Helioseismic and Magnetic Imager on-board the Solar Dynamics Observatory (SDO/HMI). This position is opened in order to develop methods for the analysis of time series acquired by SDO/HMI and their validation for the prediction of solar flares.

An important task will be concerned with the management of the interface between the developed algorithms and the technological pipeline built up at the Institute for 4D Technologies, Fachhochschule Nordwestschweiz, Windisch, Switzerland.

**Scientific disciplinary sector:** MAT/08 NUMERICAL ANALYSIS

**Place:** Dipartimento di Matematica (DIMA)

**Required degree:**

Laurea V.O. in Matematica, Fisica, Informatica

Laurea Specialistica delle classi 45/S (Matematica), 20/S (Fisica), 23/S (Informatica)

Laurea Magistrale della classe LM-40 (Matematica), LM-17 (Fisica), LM-18 (Informatica)

**Subjects of the interview:**

Knowledge of the main regularization methods for the solution of ill posed problems and of the main optimization techniques for determining regularization parameters.

The candidate will need to prove his/her knowledge of the English language.

**RESEARCH PROGRAM NO. 3**

**The assessment criteria for the qualifications and the interview will be affixed on 2.11.2016 at 15.00** in Dipartimento di Fisica, Via Dodecaneso 33, Genova.

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 2.11.2016 at 18.00** in Dipartimento di Fisica, Via Dodecaneso 33, Genova.

**The interview will be held on 4.11.2016 at 14.00** in Dipartimento di Fisica, Via Dodecaneso 33, Genova.

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

*As regards candidates, who are not resident or domiciled in Italy, and those, who are resident or habitually domiciled at a distance of more than 300 Km from the selection centre, the interview, if requested, can also be held by electronic means (SKYPE video conference call), promptly contacting Prof. Dario Barbieri on the phone number +39 010 3536455 or via the email address Dario.Barberis@ge.infn.it*

**Scientific coordinator:** Prof. Dario BARBERIS

**NO.1 research fellowship - Duration: 2 year– Annual pre-tax amount: € 19.367,00**

**Title:** Development of pixel detector technologies for HL-LHC.

**Description:** The Genoa group contributed to the design and construction of the pixel detectors of the ATLAS experiment at CERN and continues the R&D activities on this kind of detectors. The LHC accelerator will increase its luminosity by a factor 10 by 2024-2025, therefore the experiments will replace the existing detectors with other ones, based on newer technologies. In particular, the resolution, read-out speed and radiation resistance will all have to increase.

The winner of this procedure will develop and test pixel detectors based on the “3D” technology, including the assembly procedures and the quality control tests.

**Scientific disciplinary sector:** FIS/01 EXPERIMENTAL PHYSICS

**Place:** Dipartimento di Fisica (DIFI)

**Required degree:**

Laurea Specialistica della classe 20/S (Fisica)

Laurea Magistrale della classe LM-17 (Fisica)

**Subjects of the interview:**

Knowledge of particle detectors based on silicon semiconductors and their properties. Familiarity with measurements of detector performance of pixel detectors and analysis of data from laboratory tests.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 4**

**The assessment criteria for the qualifications and the interview will be affixed on 2.11.2016 at 12.00** in Dipartimento di Fisica, Via Dodecaneso 33, Genova.

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 2.11.2016 at 17.00** in Dipartimento di Fisica, Via Dodecaneso 33, Genova.

**The interview will be held on 3.11.2016 at 15.00** in Dipartimento di Fisica, Via Dodecaneso 33, Genova.

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

*As regards candidates, who are not resident or domiciled in Italy, and those, who are resident or habitually domiciled at a distance of more than 300 Km from the selection centre, the interview, if requested, can also be held by electronic means (SKYPE video conference call), promptly contacting prof.ssa Carla Biggio on the phone number +39 010 3536275 or via the email address biggio@ge.infn.it*

**Scientific coordinator:** Prof.ssa Carla BIGGIO

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Model-independent analysis of LHC data in new physics scenarios involving scalar and vector leptoquarks.

**Description:** The goal of this project is to search, in LHC data, for final states not yet studied by LHC collaborations, which can arise in Standard Model extensions involving scalar and/or vector leptoquarks. This will be done in collaboration with the LHC groups present in the Department. The project is composed of two parts, one more theoretical, where the scientist will study the phenomenology of the considered models, and another, more in contact with the experiment, where these models will be implemented in MadGraph in order to be simulated, with the final aim of realizing a new analysis of LHC data able to give new results on not yet studied channels.

**Scientific disciplinary sector:** FIS/02 THEORETICAL PHYSICS, MATHEMATICAL MODELS AND METHODS

**Place:** Dipartimento di Fisica (DIFI)

**Required degree:**

Dottorato di ricerca in Fisica

**Subjects of the interview:**

Phenomenology of models of new physics and possibility of testing them at the LHC.

The candidate will need to prove his/her knowledge of the English language.

**RESEARCH PROGRAM NO. 5**

**The assessment criteria for the qualifications and the interview will be affixed on 3.11.2016 at 12.00 in DIMES- Sez. Fisiologia - Viale Benedetto XV/3, Genova**

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 4.11.2016 at 10.00 in DIMES –Sez. Fisiologia - Viale Benedetto XV/3, Genova**

**The interview will be held on 4.11.2016 at 14.00 in DIMES - Sez. Fisiologia -Viale Benedetto XV/3, Genova**

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Fabio BENFENATI

**NO.2 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** PRRT2: a novel synaptic gene at the basis of epilepsy. Functional study in murine model and in neurons derived from patient's fibroblasts.

**Description:** The goal of the project is the clarification of the functional role of PRRT2 (PRoline-Rich Transmembrane protein 2), a gene causative for several parossistic disorder of infancy, in brain physiology and in the pathogenesis of neurological diseases. AIMS of the project:

1. Functional role of PRRT2 in neuronal development and in synaptic function and plasticity with the use of (i) primary murine neurons silenced for the expression of PRRT2; (ii) murine model in which the expression of PRRT2 is constitutively or conditionally abrogated.
2. Functional characterization of human pathological mutation in neuronal cells derived from Induced Pluripotent Stem Cells from patient's fibroblasts.
3. Novel therapeutic target by discovering protein partners of PRRT2 at synaptic level.

**Scientific disciplinary sector:** BIO/09 PHYSIOLOGY

**Place:** Dipartimento di Medicina Sperimentale (DIMES)

**Required degree:**

Laurea V.O. in Biotecnologie o in Biologia o in Medicina e Chirurgia o in Chimica e Tecnologie Farmaceutiche

**Subjects of the interview:**

Master thesis, research experiences and laboratory skills.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 6**

**The assessment criteria for the qualifications and the interview will be affixed on 3.11.2016 at 10.00** in Dipartimento di Farmacia (DIFAR) – Sezione di Farmacologia e Tossicologia - Viale Cembrano, 4 - Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 3.11.2016 at 14.00** in Dipartimento di Farmacia (DIFAR) – Sezione di Farmacologia e Tossicologia - Viale Cembrano, 4 – Genova

**The interview will be held on 3.11.2016 at 15.00** in Dipartimento di Farmacia (DIFAR) – Sezione di Farmacologia e Tossicologia - Viale Cembrano, 4 – Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Giambattista BONANNO

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Regulation of the activity of astrocytes by miRNAs shuttled in mesenchymal stem cells-derived exosomes in the SOD1<sup>G93A</sup> mouse model of amyotrophic lateral sclerosis.

**Description:** At present, there is no cure for amyotrophic lateral sclerosis (ALS) and an alternative therapeutic approach through the administration of mesenchymal stem cells (MSCs) is being considered. Indeed, MSCs can ameliorate disease expression and survival in the SOD1<sup>G93A</sup> mouse model of ALS, an effect associated with reduced activation of astrocytes. In this framework, we will assess whether the beneficial effect of MSCs in ALS can be attributed to the modulation of astroglia activity by exosome-shuttled miRNAs. We shall study if i) MSC-derived exosomes are able to modulate the activation and the detrimental functions of astrocytes from SOD1<sup>G93A</sup> mice; ii) this modulation is due to the transfer of specific miRNAs that regulate distinct pathways.

**Scientific disciplinary sector:** BIO/14 PHARMACOLOGY

**Place:** Dipartimento di Farmacia (DIFAR)

**Required degree:**

Laurea Magistrale della classe LM-13 (Farmacia e Farmacia Industriale) o titoli equipollenti

**Subjects of the interview:**

Cellular and molecular mechanisms of neuronal and glial transmission. Brain region dissection techniques for the preparation of cell cultures and the purification of subcellular neuronal and glial particles. Determination of neuro-and gliotransmitters and of the main second messengers. Cellular and molecular biology techniques for the determination of intracellular calcium, autophagy, protein misfolding and aggregation, astrocyte activation, cultured and co-cultured astrocyte damage and death.

The candidate will need to prove his/her knowledge of the English language.

**RESEARCH PROGRAM NO. 7**

**Scientific coordinator:** Prof. Francesco BOCCARDO

**NO.1 research fellowship - Duration: 2 years – Annual pre-tax amount: € 19.367,00**

**Title:** Monitoring treatment response in prostate cancer (PCa) patients: potential utility of circulating tumor cells (CTCs) as new prognostic and predictive markers.

**Description:** Metastatic spreading is a process that begins early during the growth of the primary tumor, implying a cascade of sequential events involving numerous tumor-host interactions. In the last few years, new methods of detection and characterization, led to great emphasis on the role of CTCs in relation to the process of metastasis. The presence of a high number of CTCs in the peripheral blood of patients with solid tumors correlates with a poor prognosis and the reduction in the number of CTCs after local or systemic treatments is strictly correlated with response and a longer disease-free survival. The Objective of this project is the evaluation of the number CTCs in sub-cohorts of patients at different stages of the natural history of PCa and to evaluate their prognostic and predictive value in respect to the actual therapy.

**Scientific disciplinary sector:** MED/06 MEDICAL ONCOLOGY

**Place:** Dipartimento di Medicina interna e Specialità mediche (DIMI)

**Required degree:**

Dottorato di ricerca in Oncologia ed Ematologia Clinica e Sperimentale

**Subjects of the interview:**

Biological and methodological aspects regarding the research project.

## **RESEARCH PROGRAM NO. 8**

**The assessment criteria for the qualifications and the interview will be affixed on 3.11.2016 at 9.00** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), Viale Benedetto XV 6, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 3.11.2016 at 12.00** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), Viale Benedetto XV 6, Genova

**The interview will be held on 3.11.2016 at 12.30** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), Viale Benedetto XV 6, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Alessio NENCIONI

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Preclinical validation of extracellular nicotinamide phosphoribosyltransferase as a target for treating breast cancer.

**Description:** In the context of the project “Preclinical validation of extracellular nicotinamide phosphoribosyltransferase as a target for treating breast cancer” sponsored by the Italian Association for Cancer Research (AIRC), the successful candidate will have to apply to studies of the phenotype (welfare and tumorigenesis) of C57B6 MMTV-PyMT<sup>+/+</sup>/Nampt<sup>+/-</sup> vs. C57B6 MMTV-PyMT<sup>+/+</sup>/Nampt<sup>+/+</sup> mice. He/she shall also conduct in vitro studies assessing the role of secreted NAMPT in the process of epithelial cell transformation.

**Scientific disciplinary sector:** MED/09 INTERNAL MEDICINE

**Place:** Dipartimento di Medicina interna e Specialità mediche (DIMI)

**Required degree:**

Dottorato di ricerca in Oncologia

**Subjects of the interview:**

Role of NAMPT in cancer, mouse models of breast cancer, mechanisms of epithelial-to-mesenchymal transition.



## **RESEARCH PROGRAM NO. 9**

**The assessment criteria for the qualifications and the interview will be affixed on 28.10.2016 at 09.00** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), Pad. Ex Isolamento Largo Rosanna Benzi 10, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 28.10.2016 at 12.00** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), Pad. Ex Isolamento Largo Rosanna Benzi 10, Genova

**The interview will be held on 28.10.2016 at 12.30** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), Pad. Ex Isolamento Largo Rosanna Benzi 10, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Francesco PUPPO

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** “Multidisciplinary management of cardiovascular pathologies and complications in the Cardio-Oncological Ambulatory”.

**Description:** The IRCCS AOU San Martino IST Genoa Cardio-Oncological Ambulatory (Clinic of Internal Medicine 3 and Clinic of Cardiovascular Diseases and UTIC) take care of about 500 hemato-oncological patients/year affected with cardiovascular (CV) pathologies or cancer-related CV complications. The Cardio-Oncological Ambulatory purpose is to optimize a multidisciplinary management of these patients, with the aim of guarantee coordinate care. The project will consist in:

- develop flow-chart for patients using dedicated paths for easy and rapid access and follow-up visits
- coordinate other Specialists (i.e. Vascular Surgeon or Diabetologist)
- improve patient’s quality of life

The project requires coordination between different Operative Units and the Internist specialist has a key role in this setting.

**Scientific disciplinary sector:** MED/09 INTERNAL MEDICINE

**Place:** Dipartimento di Medicina interna e Specialità mediche (DIMI)

**Required degree:**

Specializzazione in Medicina Interna con adeguata produzione scientifica derivante da Ricerca clinica

**Subjects of the interview:**

- Prevention and cure of principal cardiovascular pathologies
- Main cardiovascular complications related to hemato-oncological diseases
- Multidisciplinary management of short term cardiovascular complications in hemato-oncological patients
- Evaluation of potential long term complications in long survivor oncological patients.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 10**

**The assessment criteria for the qualifications and the interview will be affixed on 3.11.2016 at 08.30** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), Viale Benedetto xv n.6, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 3.11.2016 at 11.30** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), Viale Benedetto xv n.6, Genova

**The interview will be held on 3.11.2016 at 12.00** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), Viale Benedetto xv n.6, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Francesco PUPPO

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Clinical and instrumental evaluation of cardio-pulmonary involvement in systemic immune-mediated diseases.

**Description:** Cardiac and pulmonary complications are associated with an increase of morbidity and mortality and represent a diagnostic challenge in patients affected by systemic immune-mediated diseases (e.g. seronegative spondyloarthropaties, systemic sclerosis, SLE). The aim of the present research project is to evaluate the feasibility and predictive value of innovative diagnostic tools, such as stress echocardiography, lung ultrasound and pulmonary function tests (DLCO and DLNO), as compared to the gold standard diagnostic methods as coronary angiography and high resolution computed tomography.

**Scientific disciplinary sector:** MED/09 INTERNAL MEDICINE

**Place:** Dipartimento di Medicina interna e Specialità mediche (DIMI)

**Required degree:**

Laurea Specialistica della classe 46/S (Medicina e Chirurgia)

Laurea Magistrale della classe LM-41 (Medicina e Chirurgia)

**Subjects of the interview:**

- 1) Pathogenesis of cardiovascular involvement in systemic immune-mediated diseases
- 2) Pathogenesis of interstitial lung diseases in systemic immune-mediated disorders
- 3) Clinical and instrumental diagnosis of cardio-pulmonary involvement in systemic immune-mediated diseases.

## **RESEARCH PROGRAM NO. 11**

**The assessment criteria for the qualifications and the interview will be affixed on 3.11.2016 at 9.00** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), Monoblocco 5 piano levante, IRCCS AOU San Martino-IST, Largo R. Benzi 5, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 3.11.2016 at 12.00** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), Monoblocco 5 piano levante, IRCCS AOU San Martino-IST, Largo R. Benzi 5, Genova

**The interview will be held on 3.11.2016 at 15.00** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), Monoblocco 5 piano levante, IRCCS AOU San Martino-IST, Largo R. Benzi 5, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Pietro AMERI

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Shaping of cardiomyocyte metabolism by myofibroblasts: pathways and therapeutic targets.

**Description:** Abnormal energy metabolism in chronic heart failure (CHF) leads to a dramatic shortage in intramyocardial ATP. As a result, contraction and relaxation of the cardiac muscle, which are already defective because of the disease causing CHF, are further impaired. Our preliminary data suggest that the alterations in cardiomyocyte metabolism observed in CHF are at least in part induced by factors secreted by cardiac myofibroblasts. This project will thoroughly study the mechanisms of the paracrine modulation of cardiomyocyte metabolism by myofibroblasts, with the goal of identifying mediators and/or signaling pathways that can be targeted as a new therapeutic approach for CHF.

**Scientific disciplinary sector:** MED/11 CARDIOVASCULAR DISEASES

**Place:** Dipartimento di Medicina interna e Specialità mediche (DIMI)

**Required degree:**

Dottorato di ricerca in Scienze e Tecnologie Biomediche

**Subjects of the interview:**

Cardiac metabolism; biology of cardiac fibroblasts and myofibroblasts.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 12**

**The assessment criteria for the qualifications and the interview will be affixed on 3.11.2016 at 9.00** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), primo piano avancorpo, stanza 118, Viale Benedetto XV/6, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 3.11.2016 at 12.00** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), primo piano avancorpo, stanza 118, Viale Benedetto XV/6, Genova

**The interview will be held on 3.11.2016 at 15.00** in Dipartimento di Medicina Interna e Specialità Mediche (DIMI), primo piano avancorpo, stanza 118, Viale Benedetto XV/6, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Diego FERONE

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** “Fisiopathology of somatostatin receptors in pituitary adenomas and neuroendocrine tumors (NET)”.

**Description:** Somatostatin receptors (SSRs) are expressed in pituitary adenomas and in neuroendocrine tumors (NETs) and their expression in these tumors represents the rationale for the medical treatment with somatostatin analogs (SSAs).

This study will evaluate the role of the traditional and experimental SSAs on the hormonal secretion and cellular proliferation in vitro in primary cultures of post-surgery GH- and GH/PRL-secreting and non-functional pituitary adenomas and in a rat model of GH-secreting pituitary adenoma (GH4C1).

Regarding NETs, this study will assess in vitro the anti-tumoral effects of lanreotide (LAN) and of BIM-23A760 (SS2R/SS5R/D2R chimeric compound) using cellular lines and primary cultures of NET.

Moreover, after the injection of post-surgery NET cells in embryos of zebrafish, the anti-angiogenetic and anti-migratory effects of both compounds will estimate in vivo.

**Scientific disciplinary sector:** MED/13 ENDOCRINOLOGY

**Place:** Centro di Eccellenza per la Ricerca Biomedica (CEBR)

**Required degree:**

Laurea Magistrale della classe LM-9 (Biotecnologie mediche, veterinarie e farmaceutiche)

**Subjects of the interview:**

Histological features of neuroendocrine tumors (NET) and pituitary adenomas with in particular regard to GH-secreting pituitary adenomas; diagnosis and treatment of Acromegaly; fisiopathology of somatostatin receptors in pituitary adenomas and NET; somatostatin analogs (SSA) commonly used in clinical practice and new mono- e bi-specific SSA and panligands; cell culture techniques with particular regard to the preparation and setting of primary cultures isolated from post-surgical pituitary adenoma and NET fragments; immunoblot and immunohistochemical techniques, qRT-PCR, immunometric assays (RIA, IRMA, ELISA), cell-tissue protein extraction techniques.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 13**

**The assessment criteria for the qualifications and the interview will be affixed** on **3.11.2016** at **9.00** in Dipartimento di Neuroscienze, riabilitazione, oftalmologia, genetica e scienze materno-infantili (DINOEMI), Largo Paolo Daneo 3, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed** on **3.11.2016** at **12.00** in Dipartimento di Neuroscienze, riabilitazione, oftalmologia, genetica e scienze materno-infantili (DINOEMI), Largo Paolo Daneo 3, Genova

**The interview will be held** on **3.11.2016** at **13.00** in Dipartimento di Neuroscienze, riabilitazione, oftalmologia, genetica e scienze materno-infantili (DINOEMI), Largo Paolo Daneo 3, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Angelo SCHENONE

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Abnormalities of lipid metabolism in Charcot-Marie-Tooth type 1A (CMT1A) neuropathy.

**Description:** CMT1A is the most prevalent inherited dys/demyelinating disorder of the PNS. Currently, CMT1A lacks of effective therapies and biomarkers. Indeed, disruption of lipid biosynthesis may result in abnormal myelin and PNS pathology. This project aims to identify: i) a lipid biomarker of disease severity for CMT1A; ii) a lipid therapy relevant for CMT1A patients. We will perform high resolution mass spectrometry on a novel human CMT serum biobank and treat CMT1A DRG cultures with compounds with negligible side effects. This will allow to select the most effective compound/s that will be immediately test in the CMT1A rat. Our final output is the development of a lipid-based approach ready to be used in future clinical trials.

**Scientific disciplinary sector:** MED/26 NEUROLOGY

**Place:** Dipartimento di Neuroscienze, Riabilitazione, Oftalmologia, Genetica e Scienze Materno Infantili (DINOEMI)

**Required degree:**

Laurea Magistrale della classe LM-6 (Biologia)

**Subjects of the interview:**

- 1) Quantification of lipid species on biological fluids and nervous tissue homogenates by fluorescence-based assays;
- 2) Lipid metabolism dissection in CMT1A;
- 3) Development of an automated system to perform quantitative neuropathology on cellular and animal models.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 14**

**The assessment criteria for the qualifications and the interview will be affixed on 3.11.2016 at 09.00** in Dipartimento di Neuroscienze, riabilitazione, oftalmologia, genetica e scienze materno-infantili (DINOEMI), Clinica Neurologica, Largo Daneo 3 (ex Via De Toni 5), Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 3.11.2016 at 15.00** in Dipartimento di Neuroscienze, riabilitazione, oftalmologia, genetica e scienze materno-infantili (DINOEMI), Clinica Neurologica, Largo Daneo 3 (ex Via De Toni 5), Genova

**The interview will be held on 4.11.2016 at 11.00** in Dipartimento di Neuroscienze, riabilitazione, oftalmologia, genetica e scienze materno-infantili (DINOEMI), Clinica Neurologica, Largo Daneo 3 (ex Via De Toni 5), Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Carlo TROMPETTO

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Spasticity and spastic dystonia in patients with Upper Motor Neuron Syndrome affected by velocity-dependent hypertonia: a study conducted using surface electromyography.

**Description:** The present project has been designed to study a cohort of at least 25 patients with velocity-dependent increase of muscle tone of several etiologies and identify two groups of patients: those who are able to relax their muscles (patients with spasticity) and those who are not (patients with spastic dystonia). The two groups of patients will be featured both clinically and neurophysiologically. This project could significantly change the approach to hypertonic patients showing that spastic dystonia must be searched in all patients with velocity-dependent hypertonia using surface EMG recordings and that the presence of spastic dystonia should be taken into account when prescribing both physiotherapy and drug treatments.

**Scientific disciplinary sector:** MED/26 NEUROLOGY

**Place:** Dipartimento di Neuroscienze, Riabilitazione, Oftalmologia, Genetica e Scienze Materno Infantili (DINOEMI)

**Required degree:**

Laurea V.O. in Medicina e Chirurgia

Laurea Specialistica della classe 46/S (Medicina e Chirurgia)

Laurea Magistrale della classe LM-41 (Medicina e chirurgia)

**Subjects of the interview:**

Clinical and neurophysiological assessment of spasticity and dystonia; methodological approach to surface electromyographic evaluation using the Biopac MP150 unit.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 15**

**The assessment criteria for the qualifications and the interview will be affixed on 2.11.2016 at 8.00** in Dipartimento di scienze chirurgiche e diagnostiche integrate (DISC), Pad 4, piano terra, Largo R. Benzi n. 9, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 2.11.2016 at 11.00** in Dipartimento di scienze chirurgiche e diagnostiche integrate (DISC), Pad 4, piano terra, Largo R. Benzi n. 9, Genova

**The interview will be held on 2.11.2016 at 12.00** in Dipartimento di scienze chirurgiche e diagnostiche integrate (DISC), Pad 4, piano terra, Largo R. Benzi n. 9, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Armando SILVESTRINI BIAVATI

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Longitudinal study and statistical analysis about malocclusions and caries incidence in 3-7 years old children attending primary and elementary schools in Chiavari (GE).

**Description:** The present research represent the step two of an epidemiological longitudinal study which followed for three years a group of preschool children (born in 2008 and 2009) from early permanent dentition and determine the prevalence and incidence of caries and malocclusions and to investigate the related risk factors. The step two extend the follow up time of the sample up to the age of seven. Each year, data are collected with a questionnaire and a WHO-calibrated examiners carried out the clinical examinations. They are blind to the information collected from the parental questionnaires. Dental examination is performed in the classroom environment under natural light, using disposable gloves and masks in compliance with the infection control protocol, sterilized mouth mirrors and probes. Statistical analysis comprise descriptive models, multivariable methods and Markov's chains graphic analysis. The study was approved by the Ethical Committee of University Hospital "San Martino", Genova (registered protocol NCT02798809, <https://clinicaltrials.gov/ct2/show/study/NCT02798809>).

The candidate must therefore be in possession of appropriate scientific production resulting from clinical activities and proven research publications in journals with impact factor , posters / presentations at national and international conferences on the subject of the research object, experience in the methodology of statistical research ( parametric and non- parametric analysis , multivariate analysis, graphic models with Markov chains ) and WHO calibration procedures in clinical detection of oral diseases ( dental community ) ; experience of epidemiological investigations conducted in the field

**Scientific disciplinary sector:** MED/28 ORAL DISEASES AND DENTISTRY

**Place:** Dipartimento di scienze chirurgiche e diagnostiche integrate (DISC)

**Required degree:**

Dottorato di ricerca in Scienze Morfologiche (Anatomia ed Odontoiatria)

**Subjects of the interview:**

Description and procedures of execution of the project. Ways related to data tracking and subsequently to data collecting and statistical analysis. Knowledge of previous publications that can be related to this project.

## **RESEARCH PROGRAM NO. 16**

**The assessment criteria for the qualifications and the interview will be affixed on 3.11.2016 at 8.00** in Dipartimento di Neuroscienze, riabilitazione, oftalmologia, genetica e scienze materno-infantili (DINOEMI), U.O. Neuropsichiatria Infantile, Largo G. Gaslini 5, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 3.11.2016 at 11.00** in Dipartimento di Neuroscienze, riabilitazione, oftalmologia, genetica e scienze materno-infantili (DINOEMI), U.O. Neuropsichiatria Infantile, Largo G. Gaslini 5, Genova

**The interview will be held on 3.11.2016 at 14.00** in Dipartimento di Neuroscienze, riabilitazione, oftalmologia, genetica e scienze materno-infantili (DINOEMI), U.O. Neuropsichiatria Infantile, Largo G. Gaslini 5, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Elisa DE GRANDIS

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Abnormal cortical excitability in Anorexia Nervosa.

**Description:** The objective of the study is to investigate the potential alterations of cortical excitability and connectivity in patients affected by Anorexia Nervosa. We will use single pulse Transcranial Magnetic Stimulation and functional Magnetic Resonance with Resting State analysis. Previous studies have in fact identified structural and functional modifications with aberrant activation and connection between the limbic system and the fronto-parietal areas and dysfunctions in the neuronal pathways.

The expected result is the finding of aberrant cortical excitability and connectivity in anorectic patients in comparison with a control group of healthy subjects, related to hypercontrol, rigidity and perfectionism traits, typical of the disorder. A secondary objective is the identification of a parameter that permits to monitor the disease evolution and the treatment response.

**Scientific disciplinary sector:** MED/39 CHILD NEUROPSYCHIATRY

**Place:** Dipartimento di Neuroscienze, riabilitazione, oftalmologia, genetica e scienze materno-infantili (DINOEMI)

**Required degree:**

Specializzazione in Neuropsichiatria Infantile with adequate scientific production and post -graduate teaching specialist training on eating disorders

**Subjects of the interview:**

Clinical, epidemiologic, physiopathologic and psychopathologic aspects of Anorexia Nervosa; recent directions in research about Anorexia Nervosa, with focus on electrophysiology and neuroradiology techniques; research methodology in psychiatry.

The candidate will need to prove his/her knowledge of the English language.



<b>SCIENTIFIC DISCIPLINARY AREA: CIVIL ENGINEERING AND ARCHITECTURE</b>
---

**RESEARCH PROGRAM NO. 17**

**The assessment criteria for the qualifications and the interview will be affixed on 7.11.2016 at 9.00** in Dipartimento di Ingegneria civile, chimica e ambientale (DICCA), Via all'Opera Pia 15, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 7.11.2016 at 13.00** in Dipartimento di Ingegneria civile, chimica e ambientale (DICCA), Via all'Opera Pia 15, Genova

**The interview will be held on 7.11.2016 at 14.00** in Dipartimento di Ingegneria civile, chimica e ambientale (DICCA), Via all'Opera Pia 15, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof.ssa Angela Celeste TARAMASSO

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Environmental sustainability assessment of Universities through Life Cycle Assessment methodology.

**Description:** Development of a methodology for the application of LCA (Life Cycle Assessment) as a tool for the assessment of the environmental sustainability of Universities and definition of sustainability indicators to enhance its replicability.

**Scientific disciplinary sector:** ICAR/03 SANITARY AND ENVIRONMENTAL ENGINEERING

**Place:** Dipartimento di Ingegneria civile, chimica e ambientale (DICCA)

**Required degree:**

Laurea Magistrale della classe LM-22 (Ingegneria Chimica)

**Subjects of the interview:**

Ecodesign, Life Cycle Assessment, Greenhouse Gas Inventory, Circular Economy.

## **RESEARCH PROGRAM NO. 18**

**The assessment criteria for the qualifications and the interview will be affixed on 2.11.2016 at 12.00** in Direzione del Dipartimento di Scienze per l'Architettura (DSA), Stradone Sant'Agostino 37, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 2.11.2016 at 18.00** in Direzione del Dipartimento di Scienze per l'Architettura (DSA), Stradone Sant'Agostino 37, Genova

**The interview will be held on 3.11.2016 at 10.00** in Direzione del Dipartimento di Scienze per l'Architettura (DSA), Stradone Sant'Agostino 37, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Niccolò CASIDDU

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Human Centred Robotics Design: test and research on innovative relational and health care models, through definition and developing of devices and robotic interfaces (telepresence) within hospital and home context.

**Description:** The aim of the study is to support products and solutions for health care models, starting from the identification of users' needs and thanks to Human Centered Robotic approach. The goal is study and verify the effectiveness of devices and robotic interfaces within hospital and home context.

**Scientific disciplinary sector:** ICAR/13 DESIGN

**Place:** Dipartimento di Scienze per l'Architettura (DSA)

**Required degree:**

Dottorato di ricerca in Design

**Subjects of the interview:**

Interaction design, design for Ambient Assisted Living, design and remote assistance/telemedicine, best practices of design for All for active ageing.

## **RESEARCH PROGRAM NO. 19**

**The assessment criteria for the qualifications and the interview will be affixed on 28.10.2016 at 09.00** in Direzione del Dipartimento di Scienze per l'Architettura (DSA), Stradone Sant'Agostino, 37, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 28.10.2016 at 12.00** in Direzione del Dipartimento di Scienze per l'Architettura (DSA), Stradone Sant'Agostino 37, Genova

**The interview will be held on 28.10.2016 at 15.00** in Direzione del Dipartimento di Scienze per l'Architettura (DSA), Stradone Sant'Agostino 37, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Raffaella FAGNONI

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Design for public policies. Study and check about the coherence between the transformation goals and innovative elements of regulation - Programme Agreement University of Genoa – Municipality of Lecce.

**Description:** The project concerns the check of the compliance between the PUG of Lecce's transformation goals with the existing applicable rules, and the identification of innovative communication models. These have to pursue arguments based on enhancement and promoting the area. The candidate must have specific expertise in management and communication of decision making processes, implementation of policies, urban legislation, demonstrable also through high specialization postgraduate qualifications or an international relief master. Experiences of collaboration in the Public Authorities Technical Offices would be an advantage, and also the cooperation in the reviewing activities of transformation goals and organizational and communicational instruments of public policies.

**Scientific disciplinary sector:** ICAR/13 DESIGN

**Place:** Dipartimento di Scienze per l'architettura (DSA)

**Required degree:**

Laurea Specialistica della classe 4/S (Architettura e Ingegneria Edile) ed equipollenti

**Subjects of the interview:**

Innovation in Design policies; Participation Process and elaboration of applicable rules; Communication Tools and Rules Innovation; Urban Strategies and Action. Emergent innovative practices in urban governance and policy.

The candidate will need to prove his/her knowledge of the English language.

**RESEARCH PROGRAM NO. 20**

**The assessment criteria for the qualifications and the interview will be affixed** on **2.11.2016** at **15.00** in Direzione del Dipartimento di Scienze per l'Architettura (DSA), Stradone Sant'Agostino 37, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed** on **2.11.2016** at **18.00** in Direzione del Dipartimento di Scienze per l'Architettura (DSA), Stradone Sant'Agostino 37, Genova

**The interview will be held** on **4.11.2016** at **12.00** in Direzione del Dipartimento di Scienze per l'Architettura (DSA), Stradone Sant'Agostino 37, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof.ssa Carmen ANDRIANI

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Regeneration of boundary in-between port and city: urban strategies for neglected heritage in Ligurian environment.

**Description:** The research is focused on the Ligurian boundary between port and city and it aims to develop and define new strategies of analysis and intervention able to regenerate the abandoned part of the urban fabric.

The goals are: to apply to new analysis method on the port city and its urban artifacts studies; to map these border areas and the related buildings; to study new strategies focused on the urban fabric and able to regenerate the surrounding neighborhoods; to develop relevant design solutions for delimited Ligurian cases studies, used as test to verify the research methods and strategies; to define specific functional reuse programs, mainly related to cultural and social services.

**Scientific disciplinary sector:** ICAR/14 ARCHITECTURAL AND URBAN DESIGN

**Place:** Dipartimento di Scienze per l'Architettura (DSA)

**Required degree:**

Dottorato di ricerca in Architettura.

**Subjects of the interview:**

The interview will focus on the candidate previews experiences on both research and design practices, with a particular attention on project about urban regeneration.

<b>SCIENTIFIC DISCIPLINARY AREA: INDUSTRIAL AND INFORMATION ENGINEERING</b>
---

**RESEARCH PROGRAM NO. 21**

**The assessment criteria for the qualifications and the interview will be affixed** on **28.10.2016** at **8.30** in Dipartimento di Ingegneria navale, elettrica, elettronica e delle telecomunicazioni (DITEN), Sez. Navale, Via Montallegro 1, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed** on **28.10.2016** at **11.30** in Dipartimento di Ingegneria navale, elettrica, elettronica e delle telecomunicazioni (DITEN), Sez. Navale, Via Montallegro 1, Genova

**The interview will be held** on **28.10.2016** at **12.00** in Dipartimento di Ingegneria navale, elettrica, elettronica e delle telecomunicazioni (DITEN), Sez. Navale, Via Montallegro 1, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Dario BOOTE

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** SEABUS-PROP: Study and design of a modular hybrid propulsion system to be used in the propulsion of a suitable vessel to transport passengers or for the propulsion of boats and patrol boats operating in restricted / protected waters.

**Description:** Seabus prop is intended to develop a modular hybrid propulsion system to be used for the propulsion of passenger transport vessels as well as for the propulsion of yachts and patrol boats operating in restricted/protected waters. The project is aimed at identifying the configuration of a new modular propulsion system based on:

- a set of interconnected thermal engines driving variable speed generators;
- advanced electric motors, batteries and power electronics;

The system will be capable of reducing at least 30% the fuel consumption and greenhouse gas emissions, in respect to the hybrid propulsion system nowadays in operation.

The selected individual will be able to provide field information for the setting up of the mathematical model of the system, will be requested to design the prototype vessel to be adapted as a maritime platform to be used as a test bed for the Sea trials and will also be requested to participate to the test at sea.

**Scientific disciplinary sector:** ING-IND/02 SHIP STRUCTURES AND MARINE ENGINEERING

**Place:** Dipartimento di Ingegneria navale, elettrica, elettronica e delle telecomunicazioni (DITEN)

**Required degree:**

Laurea Magistrale della classe LM-34 (Ingegneria Navale)

**Subjects of the interview:**

Knowledge of the hybrid propulsion systems and functional integration of plant components. Security issues related to the management of works on small units up to 30 m. Generators variable speed, energy storage systems, electric propulsion engines, criteria for the development of the mathematical model of the propulsion system and system for the detection of functional parameters on board.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 22**

**Scientific coordinator:** Prof. Andrea CATTANEI

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Experimental study of the aerodynamic noise generated by the tip leakage flow in axial fans.

**Description:** The present study consists in acoustic measurements on an existing model of axial-flow fan at different operating conditions, by means of an array of microphones placed on the rotational plane and flush-mounted on the inlet duct. The acquired data will be processed in such a way to allow the modal decomposition of the acoustic pressure field, separating symmetric and spinning modes. The expected result is a deepened knowledge of the acoustic pressure field and of its link with the aerodynamic pressure field close to the rotor.

**Scientific disciplinary sector:** ING-IND/08 FLUID MACHINERY

**Place:** Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME)

**Required degree:**

Laurea V.O. in Ingegneria Meccanica

Laurea Specialistica della classe 36/S (Ingegneria meccanica)

Laurea Magistrale della classe LM-33 (Ingegneria meccanica)

**Subjects of the interview:**

Aeroacoustics of axial-flow fans, measurements techniques of the acoustic pressure in anechoic chambers and related processing and analysis techniques.

## **RESEARCH PROGRAM NO. 23**

**Scientific coordinator:** Prof. Silvia MARELLI

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Experimental evaluation of the performance of radial flow turbines.

**Description:** The objective of the project is the provision of operative tools to optimize the engine-turbocharger matching calculation within simulation models with special reference to turbine performance. The researcher will analyze turbine behavior under steady flow condition over an extended range, considering also different inlet temperature levels. Hence, the methodology of isentropic turbine efficiency evaluation will be studied on the basis of the measurements of inlet and outlet thermodynamic parameters. In particular the measurement of turbine outlet temperature, which is affected by the flow configuration in the radial direction, will be analyzed.

**Scientific disciplinary sector:** ING-IND/08 FLUID MACHINERY

**Place:** Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME)

**Required degree:**

Laurea V.O. in Ingegneria Meccanica

Laurea Specialistica della classe 36/S (Ingegneria meccanica)

Laurea Magistrale della classe LM-33 (Ingegneria meccanica)

**Subjects of the interview:**

Engine boosting, experimental techniques for investigation on turbocharging systems under steady flow conditions.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 24**

**The assessment criteria for the qualifications and the interview will be affixed on 3.11.2016 at 10.00** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Sezione MASET, Via Montallegro 1, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 3.11.2016 at 13.00** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Sezione MASET, Via Montallegro 1, Genova

**The interview will be held on 3.11.2016 at 14.00** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Sezione MASET, Via Montallegro 1, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Daniele SIMONI

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Experimental analysis of the cavity flows within gas turbine.

**Description:** The activity that will be carried out in the present Research Program will be focused on the experimental investigation of the flow developing within the seal cavities of gas turbine, and its aerodynamic interaction with the mainstream. To this end, the aero-thermal fields developing within an experimental rig simulating a turbine stage will be analyzed in order to determine the leakage mass-flow rate, the thermal stratification as well as the energy losses due to the aerodynamic interaction between the leakage flows and the secondary flow structures of the blade row.

The measuring techniques that will be adopted are: hot-wire anemometer, laser Doppler velocimeter, static and total pressure probes, thermocouples.

**Scientific disciplinary sector:** ING-IND/08 FLUID MACHINERY

**Place:** Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME)

**Required degree:**

Laurea V.O. in Ingegneria Meccanica

Laurea Specialistica della classe 36/S (Ingegneria meccanica)

Laurea Magistrale della classe LM-33 (Ingegneria meccanica)

**Subjects of the interview:**

Knowledge on advanced experimental measuring techniques for fluid dynamics applications (i.e. LDV, hot-wire anemometer etc.) will be checked. The ability in the post processing phase of experimental data will be examined. Knowledge on the unsteady three-dimensional flow evolution inside aeroengine components will be also discussed.



## **RESEARCH PROGRAM NO. 25**

**Scientific coordinator:** Prof. Aristide MASSARDO

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 27.133,00**

**Title:** Methods for monitoring and analysis of the electrical national system in presence of high efficiency CHP plants , distributed generation and renewable plants.

**Description:** In this Research Fellowship the issues related to the development of systems for the monitoring and the analysis of the Italian electrical system will be investigated, taking into proper account the strong development of the actual scenario. In particular, the research objective will be the analysis and monitoring of distributed generation (as defined by the EU Directive 2009/72/EC) plants, high efficiency CHP plants (as defined by the EU Directive 2004/8 /EC) and renewable energy plants.

The information gathered from real plants will be used to evaluate the average productivity of the plants, also in relation to the actual incentives and prices in the Italian scenario. The effects and the influence of these plants on a national scale will be investigated, analyzing potential strategies for adapting the national system to recent changes of the production mix.

**Scientific disciplinary sector:** ING-IND/09 ENERGY SYSTEM AND POWER GENERATION

**Place:** Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME)

**Required degree:**

Dottorato di ricerca in Ingegneria delle Macchine a Fluido

**Subjects of the interview:**

Energy systems, cogeneration, combined cycles, gas turbines, steam turbines, distributed generation, energy systems diagnostics, thermo-economic analysis.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 26**

**Scientific coordinator:** Prof. Aristide MASSARDO

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Thermo-economic analysis of fuel production employing renewable sources.

**Description:** The research activities deal with the thermo-dynamic and thermo-economic analyses of innovative "power-to-fuel" plant for the production of alternative fuels employing renewable electrical energy and CO<sub>2</sub> sequestered from traditional power plant. The feasibility study will be performed taking into account different plant configurations and different European economic scenarios, in order to define the best plant size and the best operating strategy. Calculation models for the simulation of each plant component and of the system as whole will be defined in order to analyze the thermo-dynamic characteristics of the component, the mutual interaction, and the influence of such parameters from the economic point of view.

**Scientific disciplinary sector:** ING-IND/09 ENERGY SYSTEM AND POWER GENERATION

**Place:** Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME)

**Required degree:**

Laurea V.O. in Ingegneria Meccanica

Laurea Specialistica della classe 36/S (Ingegneria meccanica)

Laurea Magistrale della classe LM-33 (Ingegneria meccanica)

**Subjects of the interview:**

Energy systems, energy storage systems through chemicals production, power-to-fuel system with CO<sub>2</sub> sequestration, fuel cell, national electrical grid management taking into account the influence of stochastic renewable energy sources, principles of thermo-economy, simulation of poly-generative systems for thermodynamic and thermo-economic analysis.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 27**

**The assessment criteria for the qualifications and the interview will be affixed on 28.10.2016 at 8.00** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Via Montallegro 1, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 28.10.2016 at 11.00** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Via Montallegro 1, Genova

**The interview will be held on 28.10.2016 at 12.00** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Via Montallegro 1, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

*As regards candidates, who are not resident or domiciled in Italy, and those, who are resident or habitually domiciled at a distance of more than 300 Km from the selection centre, the interview, if requested, can also be held by electronic means (SKYPE video conference call), promptly contacting prof. Alberto Traverso on the phone number +39 010 3532455 or via the email address [alberto.traverso@unige.it](mailto:alberto.traverso@unige.it)*

**Scientific coordinator:** Prof. Alberto TRAVERSO

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Probabilistic design of energy systems.

**Description:** The work will focus on studying and developing probabilistic design methods applied to energy systems, with particular attention to gas turbine fuel cell hybrid systems. These robust design methods must be applied in case studies both static and dynamic, based on adapted calculation models and consistently with the objectives of the research. The results will be validated using established methodologies such as MonteCarlo.

**Scientific disciplinary sector:** ING-IND/09 ENERGY SYSTEM AND POWER GENERATION

**Place:** Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME)

**Required degree:**

Laurea V.O. in Ingegneria Meccanica

Laurea Specialistica della classe 36/S (Ingegneria meccanica) o

Laurea Magistrale della classe LM-33 (Ingegneria meccanica)

**Subjects of the interview:**

Design under uncertainty, robust design of energy systems, advanced energy systems, fuel cell gas turbine hybrid systems.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 28**

**The assessment criteria for the qualifications and the interview will be affixed on 2.11.2016 at 8.00** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Via Montallegro 1, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 2.11.2016 at 11.00** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Via Montallegro 1, Genova

**The interview will be held on 2.11.2016 at 12.00** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Via Montallegro 1, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

*As regards candidates, who are not resident or domiciled in Italy, and those, who are resident or habitually domiciled at a distance of more than 300 Km from the selection centre, the interview, if requested, can also be held by electronic means (SKYPE video conference call), promptly contacting Prof. Alberto Traverso on the phone number +39 010 3532455 or via the email address [alberto.traverso@unige.it](mailto:alberto.traverso@unige.it)*

**Scientific coordinator:** Prof. Alberto TRAVERSO

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Advanced control algorithms for complex systems.

**Description:** The work will focus on studying and developing new control systems based on predictors for the regulation of complex systems, especially with regard to energy systems. MIMO type controllers will be considered, also applied to problems distributed in space and time.

The control logic must be verified experimentally in the laboratories made available by demonstrating its practical functionality, and estimating the performance by appropriate indices of merit.

**Scientific disciplinary sector:** ING-IND/09 ENERGY SYSTEM AND POWER GENERATION

**Place:** Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME)

**Required degree:**

Laurea Specialistica della classe 38/S (Ingegneria per l'ambiente e il territorio)

Laurea Magistrale della classe LM-35 (Ingegneria per l'ambiente e il territorio).

**Subjects of the interview:**

Dynamics and control of energy systems, advanced energy systems, measurements and data acquisition in energy plants.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 29**

**The assessment criteria for the qualifications and the interview will be affixed on 28.10.2016 at 8.00** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Via Opera Pia 15A, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 28.10.2016 at 12.00** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Via Opera Pia 15A, Genova

**The interview will be held on 28.10.2016 at 12.15** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Via Opera Pia 15A, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

*As regards candidates, who are not resident or domiciled in Italy, and those, who are resident or habitually domiciled at a distance of more than 300 Km from the selection centre, the interview, if requested, can also be held by electronic means (SKYPE video conference call), promptly contacting Prof. Matteo Zoppi on the phone number +39 3204382160 or via the email address zoppi@dimec.unige.it*

**Scientific coordinator:** Prof. Matteo ZOPPI

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** System for detection and localization of palletized freight for autonomous loading procedure.

**Description:** The researcher will develop a system for the detection, localization and tracking of palletized freight units. The information is used for the guidance of a vehicle for proper approaching of the freight unit and its loading automatically. A stereo vision head is used. The workplan comprises: manufacture of NIR stereo camera; Implementation of localization algorithm; manufacture of mechanical actuation of the system; active illumination; development of heuristic to detect the object; integration and testing.

**Scientific disciplinary sector:** ING-IND/13 APPLIED MECHANICS

**Place:** Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME)

**Required degree:**

Laurea V.O. in Ingegneria Meccanica, Elettronica, Elettrica, Informatica, Fisica

Laurea Specialistica delle classi 36/S (Ingegneria meccanica), 32/S (Ingegneria elettronica), 29/S (Ingegneria dell'automazione), 31/S (Ingegneria elettrica), 35/S (Ingegneria informatica), 20/S (Fisica), 50/S (Modellistica matematico-fisica per l'ingegneria), 66/S (Scienze dell'universo)

Laurea Magistrale delle classi LM-33 (Ingegneria meccanica), LM-29 (Ingegneria elettronica), LM-25 (Ingegneria dell'automazione), LM-26 (Ingegneria della sicurezza), LM-28 (Ingegneria elettrica), LM-32 (Ingegneria informatica), LM-17 (Fisica), LM-44 (Modellistica matematico-fisica per l'ingegneria), LM-58 (Scienze dell'universo)

**Subjects of the interview:**

Robotics, mobile robotics, freight delivery and related methods and systems.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 30**

**The assessment criteria for the qualifications and the interview will be affixed on 11.11.2016 at 9.00** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Via Opera Pia 15, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 11.11.2016 at 12.00** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Via Opera Pia 15, Genova

**The interview will be held on 11.11.2016 at 12.45** in Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME), Via Opera Pia 15, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Marco RABERTO

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Agent-based modelling and simulation of a financial economy for the study of the shadow banking.

**Description:** Economic and financial engineering studies economic and financial systems by means of a multidisciplinary approach involving competences arising from engineering, economics, computer science, mathematics and physics. In this context, the research activity will be focused on modelling and implementing an artificial financial economy based on heterogeneous interacting agents and on developing the software platforms for simulations that will provide a powerful and flexible tool to perform different computational experiments. In particular, the workings of the shadow banking and related regulatory policies will be investigated.

**Scientific disciplinary sector:** ING-IND/35 BUSINESS AND MANAGEMENT ENGINEERING

**Place:** Dipartimento di Ingegneria meccanica, energetica, gestionale e dei trasporti (DIME)

**Required degree:**

Laurea Magistrale della classe LM-16 (Finanza) o LM-31 (Ingegneria Gestionale) o LM-32 (Ingegneria Informatica) o LM-40 (Matematica) o LM-44 (Modellistica Matematico-Fisica per l'Ingegneria) o LM-56 (Scienze dell'Economia) o LM-77 (Scienze Economico-Aziendali) o LM-82 (Scienze Statistiche) o LM-83 (Scienze Attuariali e Finanziarie)

**Subjects of the interview:**

Modelling and agent-based simulation in economics and finance. Statistical techniques for the analysis of economic and financial data. Shadow banking.

The candidate will need to prove his/her knowledge of the English language.

## RESEARCH PROGRAM NO. 31

**The assessment criteria for the qualifications and the interview will be affixed on 4.11.2016 at 9.00** in Dipartimento di ingegneria navale, elettrica, elettronica e delle telecomunicazioni (DITEN) Via all'Opera Pia 11, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 4.11.2016 at 13.00** in Dipartimento di ingegneria navale, elettrica, elettronica e delle telecomunicazioni (DITEN) Via all'Opera Pia 11, Genova

**The interview will be held on 4.11.2016 at 17.00** in Dipartimento di ingegneria navale, elettrica, elettronica e delle telecomunicazioni (DITEN) Via all'Opera Pia 11, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

*As regards candidates, who are not resident or domiciled in Italy, and those, who are resident or habitually domiciled at a distance of more than 300 Km from the selection centre, the interview, if requested, can also be held by electronic means (SKYPE video conference call), promptly contacting Prof. Lucio Marcenaro on the phone number +39 010 3532060 or via the email address lucio.marcenaro@unige.it*

**Scientific coordinator:** Prof. Lucio MARCENARO

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Recognizing anomalous situation in crowded environments.

**Description:** Nowadays, the increased demand of security is a particularly relevant need of our society. Therefore, systems able to automatically interpret interactions, both among people and between people and the environment, represent an actual domain of research, which still lack efficient solutions and open problems.

The crowd phenomenon has recently increasingly attracted the attention of worldwide researchers. Different implications related to crowd behavior analysis can be considered, since both technical and social aspect is still under researchers' investigation.

The main objective of the research activity is to study and develop novel signal processing techniques for automatic detection of anomalous and potentially dangerous situation in crowded environments.

**Scientific disciplinary sector:** ING-INF/03 TELECOMMINICAZIONI

**Place:** Dipartimento di ingegneria navale, elettrica, elettronica e delle telecomunicazioni (DITEN)

**Required degree:**

Laurea V.O. in Ingegneria informatica o Ingegneria elettronica o Ingegneria biomedica o Ingegneria delle telecomunicazioni o Informatica o Fisica.

Laurea Specialistica della classe 35/S (Ingegneria informatica) o della classe 32/S (Ingegneria elettronica), 29/S (Ingegneria dell'automazione) o della classe 26/S (Ingegneria biomedica) o della classe 30/S (Ingegneria delle telecomunicazioni) o della classe 23/S (Informatica) o della classe 100/S (Tecniche e metodi per la società dell'informazione) o della classe 20/S (Fisica).

Laurea Magistrale della classe LM-32 (Ingegneria informatica) o della classe LM-29 (Ingegneria elettronica) o della classe LM-25 (Ingegneria dell'automazione) o della classe LM-21 (Ingegneria biomedica) o della classe LM-27 (Ingegneria delle telecomunicazioni) o della classe LM-26 (Ingegneria della sicurezza) o della

classe LM-18 (Informatica) o della classe LM-66 (Sicurezza informatica) o della classe LM-91 (Tecniche e metodi per la società dell'informazione) o della classe LM-17 (Fisica).

**Subjects of the interview:**

Signal processing techniques, Telecommunication systems, Artificial intelligence, C++ programming language.

The candidate will need to prove his/her knowledge of the English language.



## **RESEARCH PROGRAM NO. 32**

**The assessment criteria for the qualifications and the interview will be affixed on 21.11.2016 at 9.00** in Dipartimento di Informatica, Bioingegneria, Robotica e Ingegneria dei Sistemi (DIBRIS), Via Opera Pia 13, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 21.11.2016 at 12.00** in Dipartimento di Informatica, Bioingegneria, Robotica e Ingegneria dei Sistemi (DIBRIS), Via Opera Pia 13, Genova

**The interview will be held on 21.11.2016 at 15.00** in Dipartimento di Informatica, Bioingegneria, Robotica e Ingegneria dei Sistemi (DIBRIS), Via Opera Pia 13, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Roberto SACILE

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Design and development of mobile apps oriented to the management of the safety in the transport of dangerous goods.

**Description:** The transport of dangerous goods by road can receive support in security management by new technologies, in particular by applications on mobile devices. During the activity, it is required to design and illustrate with prototypes such applications with particular reference to: multi-objective optimal routing based on economic assessments and risk exposure assessments, evaluating the uncertainty of such exposure; management of vehicle maintenance; operational controls; assessment of geographic regions operationally inconsistent with trip planning; monitor training requirements for drivers. These applications will have to interface with a database containing information on the management of such transport.

**Scientific disciplinary sector:** ING-INF/04 SYSTEM AND CONTROL ENGINEERING

**Place:** Dipartimento di Informatica, Bioingegneria, Robotica e Ingegneria dei Sistemi (DIBRIS)

### **Required degree:**

Laurea V.O. in Ingegneria Informatica o Informatica

Laurea Specialistica delle classi 35/S (Ingegneria Informatica), 23/S (Informatica)

Laurea Magistrale delle classi LM-32 (Ingegneria Informatica), LM-18 (Informatica)

### **Subjects of the interview:**

Relational databases, technologies in Android programming environment, GIS technologies, methods for vehicle routing, methods for representation of uncertainty in risk assessment.

## **RESEARCH PROGRAM NO. 33**

**The assessment criteria for the qualifications and the interview will be affixed on 28.10.2016 at 9.00** in Centro italiano di eccellenza sulla logistica integrata (C.I.E.L.I.) Via Vivaldi 5, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 28.10.2016 at 12.00** in Centro italiano di eccellenza sulla logistica integrata (C.I.E.L.I.) Via Vivaldi 5, Genova

**The interview will be held on 28.10.2016 at 12.30** in Centro italiano di eccellenza sulla logistica integrata (C.I.E.L.I.) Via Vivaldi 5, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

*As regards candidates, who are not resident or domiciled in Italy, and those, who are resident or habitually domiciled at a distance of more than 300 Km from the selection centre, the interview, if requested, can also be held by electronic means (SKYPE video conference call), promptly contacting Prof.ssa Simona Sacone via the email address [simona.sacone@unige.it](mailto:simona.sacone@unige.it)*

**Scientific coordinator:** Prof.ssa Simona SACONE

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Multiclass modelling and multiobjective control in freeway networks.

**Description:** Objective of the proposed research activity is the development of innovative modelling and control techniques for freeway networks. As regards models, the main innovative aspects are the possibility of explicitly taking into account different vehicle classes (also including vehicles with advanced control systems of growing complexity up to fully automated guided vehicles) and the detailed modelling of pollutant emissions of the different vehicle categories in different areas of the considered network (nodes, links, and on-ramps). The control methods to be designed are based on optimal control techniques in which the performance indexes to be optimized take into account cost functions related to emissions and to safety aspects.

**Scientific disciplinary sector:** ING-INF/04 SYSTEM AND CONTROL ENGINEERING

**Place:** Centro italiano di eccellenza sulla logistica integrata (C.I.E.L.I.)

**Required degree:**

Laurea V.O. in Ingegneria Civile, Ingegneria Informatica, Ingegneria Gestionale

Laurea Specialistica delle classi 28/S (Ingegneria Civile), 35/S (Ingegneria Informatica), 34/S (Ingegneria Gestionale)

Laurea Magistrale delle classi LM-23 (Ingegneria Civile), LM-26 (Ingegneria della sicurezza), LM-32 (Ingegneria Informatica), LM-31 (Ingegneria Gestionale)

**Subjects of the interview:**

Road transportation systems modelling, control and optimization schemes of road traffic networks.

## **RESEARCH PROGRAM NO. 34**

**The assessment criteria for the qualifications and the interview will be affixed on 4.11.2016 at 11.00** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Via Opera Pia 13, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 4.11.2016 at 15.00** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Via Opera Pia 13, Genova

**The interview will be held on 4.11.2016 at 15.30** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Via Opera Pia 13, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Davide ANGUITA

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Big Data nowcasting and forecasting techniques for intelligent mobility management.

**Description:** The objective of the research is the development of scalable Data Mining and Machine Learning techniques, based on the “Big Data” paradigm, applied to intelligent mobility management with particular reference to railway transportation systems. It is expected that the candidate will develop algorithms for building nowcasting and forecasting models for intelligent mobility able to describe and predict the main assets status of a railway transportation system. Big Data technologies (e.g. Hadoop/Spark) will be exploited for integrating data from different sources and to derive data-driven models of the phenomena under exam, possibly able to integrate physical models, when available.

**Scientific disciplinary sector:** ING-INF/05 INFORMATION PROCESSING SYSTEMS

**Place:** Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS)

**Required degree:**

Laurea Magistrale della classe LM-32 (Ingegneria Informatica), LM-18 (Informatica), LM-31 (Ingegneria Gestionale) o equiparate

**Subjects of the interview:**

Big Data technologies (Hadoop/Spark), Algorithms and methods of Data Mining and Machine Learning, Nowcasting and forecasting models for transportation systems.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 35**

**The assessment criteria for the qualifications and the interview will be affixed on 28.10.2016 at 11.00** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Viale Causa 13, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 4.11.2016 at 10.00** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Viale Causa 13, Genova

**The interview will be held on 4.11.2016 at 14.00** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Viale Causa 13, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

*As regards candidates, who are not resident or domiciled in Italy, and those, who are resident or habitually domiciled at a distance of more than 300 Km from the selection centre, the interview, if requested, can also be held by electronic means (SKYPE video conference call), promptly contacting Prof. Alessio Merlo on the phone number +39 010 3532344 or via the email address alessio.merlo@unige.it*

**Scientific coordinator:** Prof. Alessio MERLO

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 23.250,00**

**Title:** Development of innovative techniques for security and privacy of mobile and distributed systems.

**Description:** The research activity is aimed at studying and developing new techniques for the security and privacy of mobile and/or distributed systems. Such techniques should improve the current state of the art. More specifically, the aim of the research is threefold: 1) the development of innovative approaches that allow to systematically discover security and privacy issues in current mobile and distributed systems; 2) the definition of new methodologies for assessing the security properties of mobile and distributed systems, and 3) the implementation of new techniques for securing both operating systems and applications that do not satisfy the expected security properties.

**Scientific disciplinary sector:** ING-INF/05 INFORMATION PROCESSING SYSTEMS

**Place:** Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS)

**Required degree:**

Laurea V.O. in Informatica

Laurea Specialistica della classe 23/S (Informatica)

Laurea Magistrale della classe LM-18 (Informatica)

**Subjects of the interview:**

- Mobile Operating Systems
- Computer Security
- Security issues on mobile devices.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 36**

**The assessment criteria for the qualifications and the interview will be affixed on 2.11.2016 at 8.30** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Via Opera Pia 13, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 2.11.2016 at 12.30** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Via Opera Pia 13, Genova

**The interview will be held on 2.11.2016 at 16.30** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Via Opera Pia 13, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

*As regards candidates, who are not resident or domiciled in Italy, and those, who are resident or habitually domiciled at a distance of more than 300 Km from the selection centre, the interview, if requested, can also be held by electronic means (SKYPE video conference call), promptly contacting Prof. Antonio Sgorbissa on the phone number +39 010 3532706 or via the email address antonio.sgorbissa@unige.it*

**Scientific coordinator:** Prof. Antonio SGORBISSA

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Robots and distributed sensor networks to support independent living.

**Description:** The project aims at developing robotic systems, as well as wearable and environmental sensor networks, with the aim of assisting elderly people in everyday activities, through innovative monitoring and automation solutions.

The project breakthrough is in the fact that, differently from existing systems, it aims at developing systems that are culturally “competent”, i.e., able to modify their own perceptual, motor and verbal behavior depending on the cultural characteristics of the person that they are assisting.

**Scientific disciplinary sector:** ING-INF/05 INFORMATION PROCESSING SYSTEMS

**Place:** Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS)

**Required degree:**

Laurea Specialistica della classe 35/S (Ingegneria informatica)

Laurea Magistrale della classe LM-32 (Ingegneria informatica)

**Subjects of the interview:**

Mobile Robots, wearable and distributed sensor networks, mathematical models, automation techniques for recognizing human activities, assistive robotics applications.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 37**

**The assessment criteria for the qualifications and the interview will be affixed on 4.11.2016 at 13.30** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Viale Causa 13, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 4.11.2016 at 16.30** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Viale Causa 13, Genova

**The interview will be held on 4.11.2016 at 17.00** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Viale Causa 13, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Gianni Viardo VERCELLI

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 23.250,00**

**Title:** Study and design of web/mobile/gaming applications for 360/3D immersive experiences fruition in virtual/augmented reality through HMD vision goggles.

**Description:** The research will aim at the comparative study of application solutions on relevant 360 ° / 3D visual experiences / perceptions in various contexts of use (via web channels and social networks, via immersive HMD viewers, through immersive environments) so that the sense of presence will be maximized and the visual / perceptive discomfort of User Experience will be minimized. In a dynamic environment and with many technological solutions proposed for immersive systems in virtual / augmented reality, for pre-competitive prototypes of web / mobile / gaming apps will be designed making it possible to integrate realized video 360 / 3D into the creation of visual experiences better suitable for immersive robotic systems / platforms.

**Scientific disciplinary sector:** ING-INF/05 INFORMATION PROCESSING SYSTEMS

**Place:** Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS)

**Required degree:**

Laurea Magistrale della classe LM-92 (Teorie della comunicazione)

**Subjects of the interview:**

Video 360/3D, technologies and methodologies of production and distribution of multi-platform multimedia video content, digital storytelling, pre- and post-video production techniques, video compositing.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 38**

**The assessment criteria for the qualifications and the interview will be affixed on 4.11.2016 at 8.30** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Viale Causa 13, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 4.11.2016 at 11.30** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Viale Causa 13, Genova

**The interview will be held on 4.11.2016 at 12.00** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Via Opera Pia 13, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Gianni Viardo VERCELLI

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 23.250,00**

**Title:** Study of digital creativity languages and realization of innovative multimedia 360/3D video formats for robotic immersive systems/platforms.

**Description:** The research will aim the study of digital creativity languages on relevant 360 ° / 3D visual experience / perception in various contexts of use (HMD vision goggles for gaming, immersive cave, smartphones HMD viewers, ...) so that it enhanced the presence. Given the current market dynamics of immersive systems in virtual / augmented reality, the study will be compared against the solutions proposed in the literature so as to keep always updated the possible scenarios of video content delivery, both in B2C and B2B perspectives for ultra high quality video fruition. Once identified and classified multimedia immersive video formats that maximize the sense of presence and user engagement, will then be selected from among those created visual experiences better suited for immersive robotic systems / platforms.

**Scientific disciplinary sector:** ING-INF/05 INFORMATION PROCESSING SYSTEMS

**Place:** Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS)

**Required degree:**

Laurea Magistrale della classe LM-92 (Teorie della comunicazione)

**Subjects of the interview:**

Video 360/3D, technologies and methodologies of production and distribution of multi-platform multimedia video content, digital storytelling, pre- and post-video production techniques, video compositing.

The candidate will need to prove his/her knowledge of the English language.

## **RESEARCH PROGRAM NO. 39**

**The assessment criteria for the qualifications and the interview will be affixed on 3.11.2016 at 9.00** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Via Opera Pia 13, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed on 3.11.2016 at 12.00** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Via Opera Pia 13, Genova

**The interview will be held on 3.11.2016 at 12.30** in Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS), Via Opera Pia 13, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Sergio MARTINOIA

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Development and implementation of algorithms for analysis of neuronal signals obtained from multisite recordings by means of high-density microelectrode arrays.

**Description:** The scientific program is focused on the development of new algorithms for analysis of neuronal signals extracellularly recorded by means of high-density microelectrode arrays. The measured electrophysiological signals present different features depending on the experimental preparation (e.g., brain slice, retina, primary culture) and needed specific processing to be correctly detected and further analyzed. Moreover, the huge quantity of data acquired during the experimental recordings (more than 4000 channels with acquisition frequency of 18KHz) set serious challenges for the management and processing of such signals-data. In particular, we seek at developing algorithms of functional connectivity for studying correlation and capable of estimating, in an automated way, connectivity maps and algorithms for LTP (long-Term Potentiation) studies on brain slices for neuropharmacological applications. The final aim is to provide efficient and reliable tools that can be used to study the interaction between network structure and functional dynamics of neuronal population.

**Scientific disciplinary sector:** ING-INF/06 ELETTRONIC AND INFORMATICS BIOENGINEERING

**Place:** Dipartimento di Informatica, bioingegneria, robotica e ingegneria dei sistemi (DIBRIS)

**Required degree:**

Laurea Magistrale delle classi LM-21 (Ingegneria biomedica), LM-32 (Ingegneria informatica), LM-18 (Informatica)

**Subjects of the interview:**

Neuroengineering, computational neuroscience, programming language, signal processing algorithms, correlation methods, information theory.

The candidate will need to prove his/her knowledge of the English language.



**RESEARCH PROGRAM NO. 40**

**The assessment criteria for the qualifications and the interview will be affixed** on **28.10.2016** at **10.00** in Dipartimento di Scienze Politiche (DISPO), P.le E. Brignole 2, Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed** on **28.10.2016** at **13.00** in Dipartimento di Scienze Politiche (DISPO), P.le E. Brignole 2, Genova

**The interview will be held** on **28.10.2016** at **14.00** in Dipartimento di Scienze Politiche (DISPO), P.le E. Brignole 2, Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Luca GANDULLIA

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** Private supply of public goods: theory and economic experiments.

**Description:** The research project aims to analyze through economic experiments in the lab the motives of charitable giving and of private supply of public goods. The theoretical and empirical literature (James Andreoni, Lise Vesterlund, Philip Grossman, James Konow) has identified three main motives and so three categories of givers: “pure” altruists (those who are motivated solely by interest in the welfare of the recipients), “warm glow” givers, also called “pure egoists” (those who receive utility from the act of giving itself) and “impure” altruists (motivated by both altruism and warm glow). Through economic experiments in the lab – for instance in the form of dictator games (es. Crumpler e Grossman) – the first aim is to isolate and measure the magnitude of the three components of altruism; the second aim is to verify in the lab (cfr. Eckel e Grossman; Kimberley Sharf), also for public policy purposes, the reaction of different givers to different models of public support for charitable contributions.

**Scientific disciplinary sector:** SECS-P/03 PUBLIC ECONOMICS

**Place:** Dipartimento di Scienze Politiche (DISPO)

**Required degree:**

Dottorato di ricerca in Economia

**Subjects of the interview:**

Public economics; experimental economics; behavioural economics; econometrics.

The candidate will need to prove his/her knowledge of the English language.

**RESEARCH PROGRAM NO. 41**

**The assessment criteria for the qualifications and the interview will be affixed** on **28.10.2016** at **10.00** in Dipartimento di Scienze Politiche (DISPO), Piazzale Brignole 3/A (Aula A Torre Centrale - piano 4), Genova

**The results of the qualification assessment as well as the names of the candidates admitted to the interview will be affixed** on **28.10.2016** at **13.00** in Dipartimento di Scienze Politiche (DISPO), Piazzale Brignole 3/A (Aula A Torre Centrale - piano 4), Genova

**The interview will be held** on **28.10.2016** at **14.00** in Dipartimento di Scienze Politiche (DISPO), Piazzale Brignole 3/A (Aula A Torre Centrale - piano 4), Genova

**Such a notice is equivalent to notification to all intents and purposes. All the candidates, who have not received notification of their exclusion, must sit for the exam, without prior notice, at the examination centre.**

**Scientific coordinator:** Prof. Giampiero CAMA

**NO.1 research fellowship - Duration: 1 year – Annual pre-tax amount: € 19.367,00**

**Title:** The Turkey's strategy toward Africa. The case of Somalia.

**Description:** The project aims at analyzing Turkey's foreign policy strategy toward Africa. It will be analyzed the role of political mediator and humanitarian actor of this country in Somalia, where it operates since 2011. Narrowly this project will study Turkish multidimensional approach, particularly Turkey's agenda focused on non official diplomacy also knowns as track two diplomacy.

**Scientific disciplinary sector:** SPS/04 POLITICAL SCIENCE

**Place:** Dipartimento di Scienze Politiche (DISPO)

**Required degree:**

Dottorato di ricerca in materie socio-politologiche

**Subjects of the interview:**

The interview will focus on the past candidate's research activities and on the candidate's skills about this research field.

The candidate will need to prove his/her knowledge of the English language.