

Festival della Scienza 2017 – October 26th –November 5th, 2017

Festival' Keyword: CONTATTI (CONNECTIONS/BRIDGES)

Phd students as a bRidge bEtween Science aNd soCiEtY (PRESENCE)

PRESENCE is organized as a satellite single day special event of the Festival della Scienza the day before the official start of the Festival (October 25th). The official language of PRESENCE will be English since involving different European partners within a MSCA-ETN project. It is composed of two parts, a seminar and a poster session.

Aim of this special event is to make a bidirectional *connection* between people and the young Early Stage Researcher (ESR) recruited within the MSCA-ETN Synchronics (SupramolecularLY-eNginEered arCHitectures for optoelectRONics and photONICS, <http://synchronics-etn.eu/project/>) project and more in general with all PhD students from different Schools.

When Advanced Scientific Research projects are funded and successfully steered, several different revenues come back to taxpayers. Some of them are obvious like the development of knowledge, of science and technology, which can be recognized as papers, books, patents and seminars. In other cases, the development of a deep knowledge brings to *connections* with unexpected fields, which however are very important for the society.

We focus this special event on the double role of PhD students as a cornerstone in the popularization of fundamental Research, which is at the core of the usual meaning of outreach. Moreover, PhD Fellows are a niche part of the Society, which benefits of high-level research training to find jobs requiring various skills, even beyond the scientific and technological one.

The huge amount of money invested into the high-level formation of PhD fellows by the EU Commission, Governments and Universities is expected to offer them opportunities for job positions better than those provided by master level education. Indeed, learning and practicing on cutting-edge research themes in an international environment provides an extraordinary opportunity to increase their preparation, to meet people, to face different cultures, and to compare different countries. In general, PhD Fellows' formation is not only related to the technical know-how, but also to human and social skills and on their personal "flexibility". The overall knowledge gained by PhD graduates is widely appreciated by Companies and Research Institutions. A simple indicator for that is the average salary earned. Usually, for PhD graduated, the salary is more than 10% larger (and in some cases even 30% larger) than for Masters (source: <http://www.wesstudentadvisor.org/2014/07/salary-difference-between-masters-and-phd.html>), as summarized in Table 1.

Average Work-Life Earnings After a Bachelor's Degree				
Major	Bachelor's Degree	Master's Degree	Doctorate Degree	% Difference in Doctorate/Master's Earnings
Biological Science	\$2,288,000	\$2,757,000	\$3,511,000	27%
Business	\$2,563,000	\$3,257,000	\$3,535,000	9%
Communications	\$2,333,000	\$2,552,000	\$3,306,000	30%
Computers and Math	\$3,044,000	\$3,541,000	\$3,890,000	10%
Education	\$1,798,000	\$2,260,000	\$2,802,000	24%
Engineering	\$3,349,000	\$3,918,000	\$4,176,000	7%
Liberal Arts	\$2,046,000	\$2,448,000	\$2,705,000	10%
Literature	\$2,083,000	\$2,444,000	\$2,755,000	13%
Physical Science	\$2,527,000	\$3,193,000	\$3,825,000	20%
Psychology	\$2,001,000	\$2,366,000	\$3,157,000	33%
Science and Engineering Related	\$2,587,000	\$2,925,000	\$3,814,000	30%
Social Science	\$2,406,000	\$2,986,000	\$3,490,000	17%
Visual Arts	\$1,966,000	\$2,227,000	\$2,545,000	14%

Note: This chart is for 25-64 year olds who are working full-time, year round
Source: www.census.gov/hhes/socdemo/education/data/acs/infographics/index.html

Table 1. Average Work-Life Earnings After a Bachelor's Degree (see more at: <http://www.wesstudentadvisor.org/2014/07/salary-difference-between-masters-and-phd.html#.dpuf>)

In addition to such considerations, we observe that the preparation of PhD fellows joined to their personality is suitable to tackle different challenges in the Society, too. The aim of PRESENCE is to provide ESRs, and PhDs students in general, an overview of such opportunities. To this end, PERSPECTIVE is organized into two sections.

- A poster session will provide ESRs with an active role demonstrating the importance of science and technology in the Society development. They will be ambassadors of science to popularize, through their fundamental research experience, different topics, which are deeply spread into our Society but whose awareness is not diffused within people. For instance, unsuspected items permeating our everyday life like photonics, organic chemistry, supramolecular chemistry, photophysics, and advanced electronics beyond silicon will be discussed. To this end, a poster session is organized within PRESENCE where Synchronics ESRs will have the privilege and the opportunity to explain by simple examples the deep essence of such topics. Presenters and titles list are summarized in Table 2.

POSTER SESSION					
ESR1: Giuseppe Carnicella – University College of London	Signal modulation to connect people or Photonics to connect the world	ESR2: Tecla Arcidiacono – University College of London	Wonderful Photonics in Nature	ESR 3: Alexandros Georgios Rapis – University College of London	Flexible electronics
ESR 4: Stefanie Claudia Neutzner – IIT	Photovoltaic technologies for a sustainable society	ESR 5: Giuseppe Maria Paternó – IIT	The flow of time: from photography to ultrafast spectroscopy	ESR6: Elisa Alloa – University of Cyprus	Good Vibrations
ESR6: Marco Squillaci – Université de Strasbourg	Self-Assembly in Nature	ESR7: Paola Lova – UNI-GE	Structural Color and sensing	ESR8: Aline Debrassi – SURFLAY GmbH Berlin	Marbles in the nanoworld
ESR9: Sabine Weidlich – UNI-Oxford	The Creator: How to synthesize a new molecule or Jail the chemistry! molecular cages	ESR10: to be recruited – UNI-Oxford	Macrocycles: from the bio world to photonics	ESR11: Valentina Robbiano – UNI-PI	The new Era: from silicon to bio-organics
ESR12: Vincenzo Grande – UNI-Wurzburg	To play LEGO with molecules: Supramolecular chemistry	ESR13: Piotr Jacek Cegielski – AMO GmbH Aachen	Photonic devices in everyday life	ESR14: Fabio Scafirimuto – IBM Zurich	Optical computing

Table 2. PRESENCE Poster session program.

- With the second session of PRESENCE, we want to show that in addition to common job positions (in Companies or in Research and Academics) additional opportunities are possible. To this end, a seminar session is organized where selected speakers will discuss various examples. Talks on science popularization, novel writing, school employments, and international scientific policy are scheduled. The preliminary program of this session is reported in Table 3.

LECTURES		
Welcome by the Academic Authorities		
Marco Pallavicini (confirmed)	Physicist and President of the Genova Science Festival	TBA
Piersandro Pallavicini (confirmed)	Chemist and Novelist	TBA
Armida Torreggiani (confirmed)	Chemist and coordinator of “raw matters ambassadors @ school”, an European dissemination project	TBA
X	Scientific Attaché	TBA
Marilena Carnasciali (confirmed)	Chemists and National Plan for Master in Science Board Member	TBA

Table 3. PRESENCE Seminar session program

List of Speakers at the seminar session:

- Marco Pallavicini, University of Genova, President of the Festival della Scienza. (Confirmed)
- Piersandro Pallavicini, University of Pavia, Chemist and Novel Writer (“La chimica della bellezza”, Feltrinelli 2016. (Confirmed)
- Marilena Carnasciali, University of Genova, Chemist and National Plan for Master in Science Board Member. (Confirmed)
- Armida Torreggiani, ISOF-CNR Bologna, Chemist and coordinator of “raw matters ambassador at school: European dissemination project”
- A Scientific Attaché of an Italian Embassy.

Being PRESENCE tailored on international ESRs, the official language of the event will be English. This provide an additional opportunity for people willing to practice with foreign languages. In particular, PRESENCE is suitable for high school Italian student will than benefit the opportunity to practice English, to learn on recent developments and applications of fundamental science as well as to hear directly from famous writers how they create their books or opera. Contacts with high school in Liguria are in progress for advertising PRESENCE.

Being this action dedicated to ESR in Synchronics, the attendance of PhD student of all Doctorate Schools of the University of Genova and other University will be stimulated. PRESENCE will help in providing a full self-awareness of their chances for the development of the Society.

Attendance of high school teachers is also welcome. A certificate for their participation will be delivered.

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