

Gabriele Cristoforetti

National Research Council (Italy)

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Employment and Education: G. Cristoforetti has a permanent researcher at the National Institute of Optics (INO), which is part of the National Council of Research (CNR) in Italy. He works in the Intense Laser Irradiation Laboratory (ILIL) at the Pisa section “Adriano Gozzini” of the INO institute. After graduating in Physics in 1998 at the University of Pisa, he obtained his PhD in 2004.

Scientific Topics: He has a long experience in laser-induced plasmas, ranging from low irradiation intensities near the ablation threshold (for applications as microdrilling, elementary analysis of materials, synthesis of nanoparticles) up to relativistic intensities obtained in ultrashort CPA laser systems (for applications as energetic electron and proton acceleration, high energy density physics), and experimental techniques devoted to plasma characterization. He is at the moment involved in European campaigns devoted to Inertial Confinement Fusion investigation (PALS, Vulcan, LMJ, Omega, GEKKO), working in particular on the investigation of parametric instabilities and hot electrons generation in regimes relevant to the Shock Ignition scheme.

Publications and Awards: He is author of 90 publications, of which more than 70 are ISI publications and 4 chapters in books, with a **H-index of 37** (Google Scholar), **33** (ISI-web of knowledge). He presented his research in numerous international conferences, including 9 invitations/Keynote speakers. He won two prizes, including the Award 2010 of the Journal Spectrochimica Acta part B: atomic spectroscopy for the best paper (250 citations according to Google Scholar) and the prize 2005 for young researchers assigned by Italian CNR. The [last paper](#) on parametric instabilities at Shock Ignition intensities was chosen as Editor’s pick by the Phys. Plasmas editors.

Activities and Responsibilities: He worked in many European and Italian projects and covered several responsibility roles, including responsible of scientific activities, PI in experimental campaign, responsible of unit research in project, and member of the Council of Institute. He is at the moment responsible of the Pisa unit of the project *Preparation and Realization of European Shock Ignition Experiments* funded by EuroFusion and led by D. Batani.

He organized two international conferences (LIBS 2000, Tirrenia, Italy 8-12/10/2000 e EMSLIBS 2009, Tivoli, 28/09-1/10 2009). He has experience in teaching in international Schools and in following students in Physics. He is habitual referee of many international journals.

Motivation: My scientific expertise and research topics are strictly related to BPIF activity and my research group in Pisa (ILIL) has a long history of common projects and experimental campaigns with many European research groups on laser-plasma and ICF related issues (it is at the moment involved in EUPRAXIA and ELI European infrastructures). Recently, we intensified our effort on the investigation of LPI in Shock Ignition regime because we are convinced that laser fusion research is ready and mature to take significant steps forward. At the same time, we recently upgraded our ILIL laser-system to 100 TW level. I therefore propose myself as a BPIF member to represent Italian community on laser-plasma and ICF research, believing that an integrate and continuative effort of European groups with complementary expertise can significantly rise the importance and the quality of European research on ICF issues. I also aim to promote the ILIL laser facility for European scientific collaborations in relativistic laser-plasma regime.

István Földes

Curriculum Vitae



1954: born in Budapest, 1977.: dipl. physicist at the Lóránd Eötvös University of Sciences.
1980. dr.rer.nat. at the Lóránd Eötvös University of Sciences.
1988. Candidate of the physical science of the Hungarian Academy of Sciences.
2003. Doctor of the Hungarian Academy of Sciences
Since 1977 coworker of the Plasma Physics Department of the at present Wigner Research Centre of the Hungarian Academy of Science, presently scientific advisor.
Guest scientist at the Max-Planck-Institut für Quantenoptik (MPQ), Garching (1984-86), (1991-93).
Participating in joint experiments in ILE Osaka (1993), PALS (2006).
Honorary professor of the University of Szeged in 2008.
Guest professor of the University of Applied Science Emden-Leer in 2012-13.
Since 1994 project leader on laser plasma interactions in Hungary (IAEA, Euratom projects).
157 publications with ~ 600 independent citations.
Organizer and Chairman of IAMPI conference (Szeged, 2006) and 31st ECLIM (Budapest, 2010).
Member of EPS and Roland Eötvös Society.
Teaching MSc and PhD courses in the University of Szeged on "Physics of shock waves",
„Radiation in plasmas”, „Introduction to the physics of laser plasmas”.
Pál Selényi award of the Roland Eötvös Physical Society in 1997.

Motivation

I am interested to become a member of the BPIF committee. I think that high intensity laser-matter interaction physics is neglected in Hungary and lacks official and financial support. Therefore I hope to strengthen this very important research field in my country by a direct participation in the work of this respected European committee. It may contribute to a stronger integration of Hungary into the joint efforts in this field, especially when taking into account that in the next years the high-power part of the Hungarian ELI-ALPS facility will start its operation.

I have been working on laser-plasma interaction physics all my carrier. I have been leading laser-plasma interaction and laser fusion activities in Hungary for more than 20 years. I was a member of the Euratom IFEWG, now participating 2 Eurofusion projects. I am an individual member of the EPS and I was a member of the EPS Plasma Physics Conference committee in 2015. Spending several years in Germany and participating in international joint experiments allows me to hope that good international connections could be established. I was ~7 years Users representative in the Laserlab Europe community.

My main research field: Inertial fusion, x-ray spectroscopy, ultrashort pulse laser-plasma interactions, application of short pulse KrF lasers.

I hope that my candidature may improve the acceptance of researches on laser-plasma interaction physics and inertial fusion physics in Hungary.

Daniele MARGARONE (born on October 21st, 1980)



Education and employment:

2004 - graduated with honors in Physics at Catania University (Faculty of Science – Department of Physics); 2006 - Marie Curie Fellowship stage at the Institute of Physics (IoP) of ASCR in Prague; 2008 - received his PhD degree in Physics at Messina University (Faculty of Science – Department of Physics) and National Institute of Nuclear Physics (INFN), Italy, defending the thesis entitled “Ion Acceleration and Diagnostics in Laser-generated Plasmas”; 2008-2011 – Post Doc Researcher at the Institute of Physics (IoP) of the Czech Academy of Science (ASCR), Prague; 2012-present - **Senior Researcher** at IoP-ASCR, Leader of the “Particle Acceleration by Lasers” Research Program (RP3) of the ELI-Beamlines project, Deputy Head of the Department of Experimental Programs at ELI-Beamlines, and responsible for the ELIMAIA (ELI Multidisciplinary Applications of laser-Ion Acceleration) beamline commissioning and operation.

Research topics:

Laser driven ion acceleration in different intensity regimes (10^{16} - 10^{21} W/cm²) using various pulsed laser systems (fs and ns) and various target geometries (massive, thin, nano- and micro-structured); corpuscular real-time diagnostics of plasmas generated by laser-matter interaction; non-linear processes participating in production of multi-MeV ions in plasmas generated by high energy, nanosecond lasers; generation of brilliant particle streams from nuclear fusion reactions triggered by high energy (kJ-class) laser systems with implications in inertial confinement fusion; generation of laser-based secondary sources for multidisciplinary applications, including new compact approaches to hadrontherapy for cancer treatment; enhancement of cancer cell killing efficacy through proton boron fusion.

Research projects as Principal Investigator:

Research project granted by the Czech Science Foundation (No. P205/11/1165) entitled “Ion acceleration by femtosecond laser pulses in advanced targets”; ASCR Czech-Korean research project granted by the Czech Academy of Science (No. M100101210) entitled “Exploration of new regimes for particle acceleration using petawatt lasers”; Research project granted by the Czech Science Foundation (No. 15-02964S) entitled “Interaction of high intensity laser pulses with specially designed targets as a source of energetic particles and radiation”; Technology transfer project named "Proton Therapy Treatment" (GAMA) funded by TACR (05/2017 - 12/2019).

Scientific Membership:

2005-2007 - member of the Italian Physical Society (SIF); 2004-2008 – member of the Italian National Institute of Nuclear Physics (INFN); 2012-2015 - National Contact Point for the Czech Republic within the Laserlab European Consortium; 2012-2017 - Member of the Beam Plasma & Inertial Fusion (BP&IF) section of the Plasma Physics Division at the European Physical Society (EPS).

Educational, Publication and technology transfer activities:

- Supervisor of more than 10 BSc, MSc, PhD students defending thesis on laser-plasma-based particle acceleration
- Co-author of more than 160 papers in international scientific journals, more than 1100 citations (WoS), h-index: 17.
- Co-inventor of 2 EPO patents (1 granted and 1 submitted)

In case of my election, I hereby declare to serve as member of the board of the Beam Plasma and Inertial Fusion section of the Plasma Physics Division at the European Physical Society to the best of my ability, and also to be keen to fulfil my duties towards the related scientific community.

Daniele Margarone

Curriculum Vitae

Caterina Riconda



Date and place of birth : 8 juillet 1967, Turin (Italie)

Citizenship: Italian

Currently : Professor

Laboratoire pour l'Utilisation des Lasers Intenses

LULI, UMR 7605

Université Pierre et Marie Curie (UPMC)

Section CNU 30

E-mail /Tel. : caterina.riconda@upmc.fr / +33(1)44279666

Languages : French, English, Italian (mother tongue)

Education : June 2008 « Habilitation à Diriger des Recherches », U. Pierre et Marie Curie.

September 1992-January 1997 : Ph.D. at the Massachusetts Institute of Technology, Cambridge, MA, USA. Title: « Contained Modes in Inhomogeneous Plasmas and Their Interaction with High Energy Particles ». Advisor : Prof. Bruno Coppi.

1986-91 « Laurea in Fisica » (110/110 with honors), University of Torino, Italy.

1986 « Maturità Classica » (60/60), Torino, Italy.

Main activities and responsibilities

Group Leader : « Théorie et Interprétation, Plasmas et Simulations » (TIPS).

Project manager/partner of French and international grants (ANR, MoU ELI Beamlines, Prague).

Leader of the « Plasma theory » workpackage and member of the steering committee of french government grant Plas@Par.

Scientific expert for NSF, DOE (USA), NSERC (Canada) and ANR, ERC (Europe) grants.

Reviewer for Physical Review Letters, Phys. of Plasmas, Europhys. Letters, Nature Physics.

Co-chair of the Forum ILP 2015 Conference. Sub-chair 2017 of the Laser and Beam Session of the « European Physical Society - Plasma Division».

Member of the Academic Council of Sorbonne University, and of the Physics Faculty board in Sorbonne University.

Number of publications 56

H-number 22 **I10-number** 38 (Google Scholar)

My main research activities are related to theory and kinetic simulations of laser created plasmas, laser plasma interaction, plasma waves and nonlinear and kinetic effect. Recent interests include Ultra High Intensity (UHI) Laser-plasma interaction, relativistic particles and quantum description of laser-particle interaction, magnetized plasma jets and laboratory astrophysics. I have been participating to EPS meetings since I obtained my PhD and I strongly support the idea of fostering interactions among researchers at the European level and neighboring countries, and expanding the plasma-community, thanks to exchanges within different sub-fields. I am interested in the principle of equal opportunities and in fair representations of women and minorities in international meetings. I have longstanding experience as board in national and international meetings and in Sorbonne University.

Andrey B. Savel'ev
M.V. Lomonosov Moscow State University
Faculty of Physics and International Laser Center



Address: Leninskie Gory, 1 Moscow 119992 Russia
E-mail: abst@physics.msu.ru, ResearcherID: D-7680-2012
Birthdate: November, 8 1963

Professional Preparation

M.V. Lomonosov Moscow State University, Moscow, Russia Physics M.S., 1986
M.V. Lomonosov Moscow State University, Moscow, Russia Physics PhD., 1989
M.V. Lomonosov Moscow State University, Moscow, Russia Physics DrSc., 2004

Appointments

- 05/2010-present Professor, Faculty of Physics, M.V. Lomonosov Moscow State University
- Head of the Laboratory of Relativistic Laser Plasma
- 10/1998-02/1999 – Guest Senior Researcher at Max-Born Institute, Berlin, Germany
- 05/1989-05/2010 Research Scientist, Assistant Professor, Associate Professor, Faculty of Physics, M.V. Lomonosov Moscow State University

Products

- Co-authored more than 180 research papers in refereed scientific journals
- PI of more than 20 scientific projects, including recent RSF-DFG joint project
- Scientific advisor of 8 PhD thesis (2004-2016)

Honors and Awards:

- 2004, MSU First Award as a Young Distinguished Scientist;
- 2016 MSU First Award as a Distinguished Lecturer for the Introduction to Quantum Physics course

Education Initiatives:

- 2007-Present, OSA student chapter advisor at ILC MSU,
- Lectures on Introduction to Quantum Physics, Introduction to Laser Physics, Physics of Lasers, Hot dense plasma, Extreme light intensities: generation and applications

Professional Memberships: 1998 -present – OSA member

- Editorial board member of Laser Physics Letters & Laser Physics Journals
- Editorial board member of Quantum Electronics Journal
- Program Committee Member: Laser Physics Workshop (2012-present), International conference on non-linear optics (2013, 2016), European Conference on Laser interaction with Matter (2016), and other workshops and seminars

Motivations to join the BPIF board

My research topics are closely linked to the BPIF activity. Being involved in different scientific collaborations inside Russia and abroad, and having wide contacts with plasma physics related institutes in Russia and abroad, I really see the need for much more extensive and deep collaboration between Russian scientific community and Europe. This is even more important now when political tensions and problems make serious impact on the scientific collaboration. Especially we felt this for France and Great Britain. I hope that the EPS (and the BPIF section) could be one of the instruments improving the situation. I have also realized that Russian physics community is not a part of the EPS in the form of member society and this should be changed. As a university professor I have numerous contacts with students and young researchers and I think it is worth to launch special BPIF school with participation of young researches from different countries with lectures by leading scientists from our community.

Angelo Schiavi



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Angelo Schiavi is a physicist specialised in modelling and numerical simulations. He earned a PhD at the Imperial College of London, London, UK conducting experimental investigations of laser-plasma interactions. Since 2002 he has been based at the Engineering Faculty of the University of Rome 'La Sapienza', where he teaches General Physics in undergraduate courses, and Plasma Physics in master courses. The most active fields of research are the optimisation of dose deposition in cancer therapy using accelerated charged particles; the study of gain and robustness of capsule implosions in Shock Ignition; the target design for Inertial Confinement Fusion; the generation and transport of fast electrons in dense hot plasma for advanced ignition schemes in fusion energy research; the acceleration and transport of proton beams for plasma diagnostics; the study of electron bunch instabilities in linacs and storage rings.

Motivation for elections:

I propose myself as a possible candidate to represent Italy in the Beam Plasma and Inertial Fusion (BPIF) EPS committee in the next elections.

I will do my best to represent the activities of the Italian scientific community involved in research for Inertial Confinement Fusion, laser-plasma interactions and in the related fields.

I will also promote within the committee the interests and the involvement of Italian research groups in projects and collaborations at all levels.

Dr Robert H.H. Scott

Central Laser Facility, Rutherford Appleton Laboratory, Oxfordshire, UK



Scott has a permanent position as the radiation-hydrodynamics expert within the Plasma Physics Group, Central Laser Facility, Rutherford Appleton Laboratory (RAL). With particular expertise in laser inertial confinement fusion (ICF), Scott has over 10 years' experience designing, performing and simulating ICF experiments. Prior to his PhD, Scott led the project management, design, manufacturing, and commissioning of the £3M target assembly for the £300M ISIS TS2 Neutron Spallation Source at RAL. Leading a team of ~15, this project was delivered on-budget and 6 months early. Scott then undertook a PhD in Plasma Physics at Imperial College London. Studying the topic of fast electron transport in inertial confinement fusion, this combined both experimental and computational work. On completion of his PhD, Scott then worked as an ICF radiation-hydrodynamics designer at the National Ignition Facility (NIF), Lawrence Livermore National Laboratory (LLNL) where he gained direct experience of NIF implosion experiments. Here Scott made key theoretical contributions to the understanding of NIF implosions, which were previously unexplainable. This resulted in the development of new diagnostics, which verified Scott's theoretical predictions. It has resulted in an ongoing campaign on this multi-billion-dollar machine to rectify this issue. The issue Scott identified is still recognised as the key factor limiting NIF's ICF performance. With principal interests in ICF, Scott uses multi-dimensional radiation-hydrodynamics, Particle-in-cell and Monte Carlo techniques to design and analyse laser-plasma experiments.

Scott is the project PI on a 3 year, £1.3M Engineering and Physical Sciences Research Council (EPSRC) grant, "Plasma kinetics, pre-heat, and the emergence of strong shocks in laser fusion: the hydro-kinetic regime". This grant combines new experiments on the Omega laser facility with the development of innovative laser-plasma interaction and hot-electron simulation tools and methodologies. A key outcome will be the encapsulation of the experimental datasets in new 'hydro-kinetic' models within our radiation-magneto-hydrodynamics code. The resulting improved predictive simulation capabilities will be of key importance in determining the viability of the direct-drive and shock ignition approaches to laser fusion over the coming years. This a multi-institution grant, funding RAL (Scott (project lead), Glize), University of York (Prof. N. Woolsey, Antonelli), and the University of Warwick (Prof. T. Arber, Bennett). Furthermore, this work is a cornerstone of a wider international collaboration on shock ignition incorporating the AWE, CELIA (University of Bordeaux), General Atomics, UCSD, and the Laboratory for Laser Energetics, Rochester, USA.

Scott is also the RAL Principal Investigator on the EPSRC grant "CCP Flagship: A radiation-hydrodynamics code for the UK laser-plasma community", and a co-investigator on the Euro-fusion grant "Preparation and Realization of European Shock Ignition Experiments".

Scott has made key contributions to the areas of indirect drive central hotspot ignition and fast electron transport in ICF, with two first author publications in *Physical Review Letters* on these topics [PRL 110, 075001 (2013), PRL 109, 015001 (2012)]. He has twenty-six, first or co-authored papers.

Scott is a member of the Institute of Physics and the American Physical Society. He lives in Oxford, has three children Olive, Rosie and Tom, and enjoys playing football and climbing when allowed by his wife Cathy!

With experience of working both in the UK and US, and a background in both high-intensity laser-plasma interactions and laser fusion, and I would seek to provide the EPS board with a balanced perspective on these aspects of plasma physics. I am a passionate believer in the potential benefits that fusion can bring mankind. Through my involvement in the EPS, I would seek to promote the potential benefits that the 'non-proliferative' direct drive laser fusion schemes offer, and to raise the profile of laser fusion in Europe.

Luca Volpe

Motivation letter to become Member of the BIPF Board

Date: Salamanca 02/12/2017

Personal address: Calle Florida 2
37007 Salamanca
SPAIN

Professional address: Centro de Láseres Pulsados (CLPU)
Edificio M5. Parque Científico. C/ Adaja, 8.
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Mobile: +39 3402940744 +34 635682422

Email: lvolpe@clpu.es lvolpe@usal.es

Nationality: Italian

Born: 09/10/1971 Milano (Italy)

Married, one children

Status:

Since 2014 I am leading the CLPU Laser-Plasma chair at the University of Salamanca

I am the responsible of the scientific research line and relation with the user community as well member of the scientific Panel for User access at the VEGA system.

Formation and expertise:

My personal formation is centered in Laser-Plasma physics and laser-driven radiation and particle beams with focus on study extreme state of matter. I started my career studying the physics of Free Electron Lasers, with particular interest in multi body phenomenon (my favourite book is from Prof. Balescu) and I was awarded with the "Francesco Resmini" National Prize by national Institute Of Nuclear physics (INFN) for the best Italian PhD Thesis of 2008 in accelerator physics. Beside my theoretical background I run more than 15 experimental campaigns in laser-plasma physics from 2008, half of them I was PI or Co-Pi. I worked in EU and Extra EU big laser facilities among which RAL, PALS, LULI, LLNL and of course CLPU. The main subject of the experimental campaign focus on studying of laser-driven particle generation and related applications from Inertial confinement fusion and particle beam. Recently I started a experimental activity on Proton Stopping Power measurement and WDM characterization that I am trying to carry out both on large scale (kJ, ps-ns) facilities (LMJ and ORION) as well as in smaller scale (~J, fs) but High repetition rate facilities (CLPU and Gemini).

Actual scientific activity:

In Salamanca I am hardy working to develop a laser-plasma background in order to support the scientific activities at the CLPU facility. In the following the main actions I did and I am doing to reach this goal:

- Formation at PhD level, at the moment I am directing five PhD students that are also involved in the CLPU laboratory
- Together with The team at CLPU we started operating the 200 TW system finalising commissioning experiments for the 200 TW and planning the one for the 1PW system
- I organised the first International call for Users that will start the beginning of 2018
- I organised training at under-degree, MSc and PhD level to promote and spread Laser-plasma physics in the territory of Salamanca and in Spain. With respect to this I am the national responsible of an ERASMUS + project "PowerlabPs" (2017-2019) which aim is to train students in laser-Plasma

Why I want to Join BPIF:

I am willing to join the BPIF board because I think this will keep me closer to the international research on Laser-Plasma Physics. Also I would like to give my contribution as Spanish represented on the topic and in Particular representing an important and unique laser-facility (CLPU) which is now as the centre of the interest of all the Laser-plasma community. Currently (and in all my career) I am involved in many of the activities related to BPIF and I have scientific collaborations with most of the actual members of the Board with which I shared different and interesting scientific investigations. With respect to this CLPU was hosting the 13th Direct drive Fast Ignition Workshop and most of the next accepted experiment in 2018 on the VEGA 2 (200 TW) system are on laser-driven particle beam and laser-plasma fundamentals.

Publications

I am author of about 65 publications with 440 citations and h index 12

It is important to say that my publication rate have to be evaluated considering that i) after my PhD I changed to Laser-plasma physics, ii) the last 4 years I concentrate mainly on CLPU operation and formation of people.