Vitae

Gianpaolo Bellini- Elementary Particle and Astroparticle Experimental Physicist
Born: 12/06/1935 in Milano, Italy
Diploma Liceo Classico (1954; Liceo Berchet, Milano); **Laurea** in Fisica (1959; Universita' degli Studi di Milano; **Libera Docenza** (1967-Italian National Competition); Full professor (1976-Italian National Competition)
Married: Nice Terzi; **Child**: Tommaso; **Grand Children :** Rachele, Ignazio
Roman **Catholic**

Positions

1960-1976 Associated Professor at the Universita' degli Studi di Milano;
1976-2010 Full professor at the Universita' degli Studi di Milano;
nov. 2966-nov. 1967 Nato Fellowship at Universite' d'Orsay-France
nov. 1984-nov. 1985 Fellowship at CERN
nov. 2001-nov.2003 Guest Scientist at the Gran Sasso Laboratory
1960- still now Researcher associated to the Istituto Nazionale di Fisica Nucleare (INFN)

Societies and Academies

1980-1983 *Member* of the Council of the European Physical Society (*EPS*).
1983-1986 *Member* of the European Committee for Future Accelerators (*ECFA*) and of the Restricted ECFA (*RECFA*), the ECFA executive Committee.
From **1960** *Member* of the Italian Physical Society (*SIF*) and since **2011** *Member Emeritus* of the same Society.
From **nov. 2009** *Member* of the Academy "*Istituto Lombardo di Scienze e Lettere".*
1982 *Soecial mentionl* for research merit of the *URSS Academy of Sciences***.**

Scientific Directorates and Managements

1973-1983 *Member* of the *Council* of the Italian National Institute for Nuclear Research (Istituto Nazionale di Fisica Nucleare- *INFN*)
1983-1989 *Member* of the *INFN Executive Committee*.
1988-1989 *INFN Vice-President*.
1981-1983 *Chairman* of the *INFN computer committee,* which has realized *INFNet*, the first Italian computer network and organizer the first Computer centers at the main INFN Sections.
1988-1999 *Responsible* of the *INFN National program for Applied Superconductivity*. During the Bellini's directorate the following

Projects have been carried out in collaboration with Italian Industries: construction of one half of the *LEP resonant cavities*; development and realization of *B0*, the *ATLAS barrel toroid prototype*; development and construction of the *first prototypes of the LHC dipoles*; development of the *superconductive wires* for B0 and LHC dipoles; development of new technologies for high efficiency resonant cavities.

2004-2008 Director of the PhD School of the "Universita' degli Studi di Milano" in " Physics, Astrophysics and Applied Physics"

2006 Member of CIVR, the first Italian National Evaluation of the Research.

2003- 2012 Coordinator of the network ISAPP, International Schools of AstroParticle Physics, which includes 33 Istitutions from Europe, Russia and Israel. Isapp has been founded by G.Bellini.

Responsibilities in the fundamental Research

1959-1967 Member of the Milano group of the bubble chamber BP3; collaboration Orsay-Saclay-Milano-Berkeley

1968-1973 Italian P.I. of the international collaboration CERN, ETH, Imperial College, Milano, for the "Study of coherent production of high energy particles on complex nuclei with the CERN magnet "Little Omega".

1974-2011 Responsible of a joint Milano University- INFN Group and of the related laboratory for the development of high energy physics detectors.

1974-1978 Spokesman of the Experiment CERN-Serpukhov nb.5 (Milano-JINR(Dubna)-IHEP(Serpukhov)-Warsaw) on " Coherent production of high energy Particles on complex nuclei" at the Serpukhov accelerator.

1978-1984 Responsible of the Milano group in the Collaboration Frascati-Milano-Pisa-Imperial College for the experiment FRAMM, the first CERN-SPS experiment on " Charmed particles"

1984-1992 Italian P.I. on the collaboration : Boulder, Fermilab, Frascati, Urbana, Milano, Northwestern, Notre Dame, Pavia for the experiments E400 and E687 on "Charmed particles at Fermi National Laboratory.

1990-2011 Spokesman of the Borexino Collaboration: Milano, Genova, Gran Sasso lab.,Perugia, Princeton, Virginia Tech., Massachusset Univ.,APC, TUM, Heidelberg MPI, JINR, Jagellonian Univ. for Borexino project on Solar Neutrinos" at the Gran Sasso Underground Lab..

Conferences and Schools

G.Bellini has been the **founder** of three series of Conferences**: Physics in Collision** (PiC- started in 1981 at Blacksburg-Virginia)), Heavy Quarks and Leptons

(HQ&L- started in Frascati), The Physics of the Sun and Solar neutrinos (Physun- started in 2008 at the Gran Sasso Laboratory).
He has organized the following Conferences: Interaction of elementary particle with nuclei (Trieste 1970), High energy collision involving nuclei (Trieste 1974), Recent development in High energy physics (Campione d'Italia 1977), Triangle Seminar [Italy-Poland-Croazia] (Marilleva 1978), Multiparticle production on nuclei at very high energies (Trieste 1976), The search for Charm, Beauty and Truth at high energy (Erice 1981), Physics in Collision (Blacksburg, Virginia 1981), Physics in Collision III (Como 1983), Present and future of the Neutrino Physics in Europe (Frascati 1985), Search for Heavy Flavors (Como, 1983), Recent projects and developments in acceleration machines (Varenna 1990), Advanced study conference on Heavy Flavor (Pavia 1993), International Symposium "Frontiers in Physics" (Milano,1997), Workshop on " Status of the Standard Solar Model" (Milano 2004), The Physics of the Sun and the solar neutrinos (Gran Sasso Lab. 2008, 2010, 2012).
Director of the Summer Schools: International School on Astroparticle and Neutrino Physics (Varenna 2002), International School on Neutrino physics, astrophysics and cosmology (Madonna di Campiglio 2003), International School on Astroparticle Physics (LNGS 2004), International School on Neutrino Physics and Astrophysics (Varenna 2011).

Journals

Referee of: Nuclear Instruments and Methods, Nuclear Physics, Italy-Germany University, INTAS.
Editor of EJPPlus (European Journal of Physics Plus).

Cultural Societies and Journals

Co-founder in 1980 of the Centro Culturale di Milano and organizer of the "**Scientific Mondays**"
Organizer with Onorato Grassi of the "Winter Colleges" of the **Cultural Academy of Science and Culture** (1987,1988,1989)
Co-founder of the Cultural Journal: "Synesis".
Organizer of the **EPS** conference**:** "Physics and Culture", Como, 1987.

Technical Developments and Achievements

First Silicon **active targets** used at CERN (Little Omega) and at Serphukov experiments**.** Second generation used at Fermilab**.**
Development of the **Silicon microstrip chambers** (in the same time than in Munich and in Pisa).
Construction of the first **Microstrip Vertex Detector** (used in E687 at Fermilab).
World Record in **Radiopurity** achievements (Borexino detector)

Physics discoveries and contributions

1- Particle resonances (first measurement of the $\mathbf{f^0}$ **spin,** discovery of $\mathbf{g^0}$)
2 - Coherent production of High Energy Particles on Complex Nuclei

(developments of the physics of the **coherent productions** in the collisions particle-nuclei, first determination of the $\mathbf{A_1}$ **spin-parity,** discovery of the **first [π'] and second [π"] radial excitation of the π**).

3 – **Charmed particles decays and lifetime** (first measurement of $\mathbf{D^{\pm}}$ **lifetime** via exponential with active target; measurement of the **lifetimes of all charmed mesons** and baryons **(D, D_S, Λ_C, Σ_C, Ξ_C)**; **first** measurement of **the Ω_C** lifetime, via the microstrip vertex detector; first measurement of excited states of charmed particles and first evidences of several Cabibbo and double Cabibbo forbidden decays, and of new semileptonic decays)

4 - **Neutrino Physics. Firs**t measurements of **neutrino interactions at sub-MeV energy; first measurement** of the solar neutrino fluxes from ^{7}**Be** and **pep reactions, first measurement** of the solar neutrino flux from ^{8}**B with lower threshold down to 3. MeV; first evidence** of the **neutrino oscillation in Vacuum; first determination** of the ratio between ν_e **survival probability in vacuum and in matter ; first evidence of geoneutrinos** with **C.L. 4.2 σ; most stringent limit** on the solar neutrino flux from **CNO; first measurement of the solar neutrino pp flux.**

Borexino has been nominated within the "Top Ten of the physics breakthroughs of 2014" by Physics World (IOP).