

Omar Benhar Curriculum Vitae



Personal information

Family name, First name: Benhar, Omar

Researcher unique identifier: Researcher ID J-6044-2012

Nationality: Italian

Date of birth: October 28, 1953

URL for web site: <http://chimera.roma1.infn.it/OMAR/personal/index.html>

• Education

1975 Laurea in Fisica, *cum laude*, "Sapienza" University, Rome, Italy.

• Current positions

2004 – Research Director, Istituto Nazionale di Fisica Nucleare (INFN), Roma, Italy.
2011 – Professor, Department of Physics, "Sapienza" University, Rome, Italy.
2013 – Adjunct Professor, Center for Neutrino Physics at Virginia Tech, Blacksburg,
 Virginia 24061, USA.

• Previous positions

10/19 – 12/19 Visiting Scientist, CERN Theory Division.
08/13 – 03/14 Visiting Professor, Department of Physics, Virginia Tech, Blacksburg, Virginia,
 USA.
08/97 – 08/98 Visiting Professor, Old Dominion University, Norfolk, Virginia, Usa & Visiting
 Scientist, Theory Group, Jefferson Lab, Newport News, Virginia, USA.
01/94 – 06/94 Visiting Scientist, International School for Advanced Studies (SISSA), Trieste,
 Italy.
08/91 – 08/93 Visiting Research Professor, University of Illinois at Urbana-Champaign,
 Urbana, Illinois, USA.
01/82 – 11/04 Researcher, Istituto Nazionale di Fisica Nucleare (INFN), Rome, Italy.
08/78 – 08/79 Lecturer, Universita' della Calabria, Cosenza, Italy.
06/76 – 12/77 Fellow, Physics Laboratory, Istituto Superiore di Sanita', Roma, Italy.
01/76 – 06/76 Visiting Scientist, Department of Physics, University of Oulu, Finland.

- **Supervision of graduate students and postdoctoral fellows (since 2005)**

2005 – 2 postdoctoral fellows. INFN and "Sapienza" University, Rome, Italy, and International School for Advanced Studies (SISSA), Trieste, Italy.
5 PhD students, "Sapienza" University, Rome, Italy.
1 PhD student, Universita` Roma 3, Roma, Italy.
1 PhD student, International School for Advanced Studies (SISSA), Trieste, Italy.
20 Master students, "Sapienza" University, Rome, Italy.

- **Teaching**

1997 – 1998 Graduate Quantum Mechanics I & II. Old Dominion University, Norfolk, Virginia, USA.
1998 – 2009 Relativistic Quantum Mechanics, Electroweak Interactions and Gauge Theories. "Sapienza" University, Rome, Italy.
2005 – 2006 Physics of Dense Matter. "Sapienza" University, Rome, Italy.
2007 – 2016 Structure of Compact Stars. Doctoral School "Vito Volterra", Rome, Italy.
2010 – 2012 Gauge Theories. "Sapienza" University, Rome, Italy.
2013 – Quantum Electrodynamics. "Sapienza" University, Rome, Italy.
2017 – Relativistic Quantum Mechanics. "Sapienza" University, Rome, Italy.
2017 Introductory Nuclear Physics. University of Okayama, Japan

- **Organisation of scientific meetings**

1998 – Founder and co-organiser of the Workshop on Lepton-Nucleus Scattering (Marciana Marina, Italy). Biennial meeting sponsored by INFN and the United States Department of Energy (DOE). International attendance of about fifty, including a sizeable fraction of postdoctoral fellows and PhD students.
2002 – 2018 Co-organiser of the 2002, 2004, 2005, 2007, 2009, 2011, and 2015 editions of the International Workshop on Neutrino Nucleus Interactions in the few GeV region (NUINT). Chair of the Organizing Committee of NUINT 2018, held at the Gran Sasso Science Institute (GSSI).

- **Commissions of trust**

2005 Member of the Panel appointed by the Italian Committee for the Evaluation of Research (CIVR) to review the output of the Italian research system in the period 2004-2008.
2010 Reviewer of proposals submitted under the FP7 "Ideas" Specific Programme of the European Research Council (ERC).
2011 - Reviewer of proposals submitted to the National Science and Engineering Research Council (NSERC) of Canada, the United States National Science Foundation (NSF), the National Commission for Scientific and Technological Research of Chile (CONYCIT), and the United States – Israel Binational Research Foundation.
2012 Member of the Panel appointed by Italian National Research and University

- Evaluation Agency (ANVUR) to review the output of the Italian research system in the periods 2004-2010 and 2011-2014 (VQR).
- 2015 Member of the Panel appointed to review the proposals submitted to the University of Rome "Tor Vergata" under the Project "Uncovering Excellence"
- 2015 - 2019 Member of the Board of Directors of the European Center for Theoretical Studies in Nuclear Physics and Related Areas (ECT*)

In addition to the above activities, I serve on a regular basis as a reviewer of manuscripts submitted for publication in leading Physics Journals, including Physical Review Letters, The Physical Review C, The Physical Review D, Nuclear Physics A, Physics Letters B, Physics Reports, The European Physical Journal A, The European Physical Journal C, Journal of Physics G, Annals of Physics and The Journal of Low Temperature Physics.

- **Memberships of scientific societies**

Italian Physical Society (SIF, since 1985)
 European Physical Society (EPS, since 1985)
 American Physical Society (APS, since 1992)

- **Major collaborations**

- 2007 – 2016 National Coordinator of the INFN Theory Collaboration MANYBODY. As of February, 2016, the Collaboration involved 18 researchers (11 tenured, 2 postdoctoral fellows, and 5 PhD students) from eight Departments.
- 2008 – 2013 Italian Spokesperson of a Collaboration between the University of Barcelona and the INFN groups of Roma and Catania, funded through an agreement between INFN and the Ministry for Science and Innovation of Spain (MICINN).
- 2014 – Co-spokesperson of a collaboration of more than thirty researchers---belonging to eight different institutions based in Europe, Japan and the United States---that successfully proposed the measurement of the electron-argon cross section at Jefferson Lab (Newport News, Virginia, USA). Data taking has been completed in March, 2017, and the analysis is under way.
- 2014 – Member of the Dense Matter Working Group, within the framework of the Large Observatory For X-ray Timing (LOFT).

- **Selected Publications**

Below is a list of ten relevant papers published in peer-reviewed journals:

- (1989)
- [1]. O. Benhar, A. Fabrocini, and S. Fantoni. *The nucleon spectral function in nuclear matter*. Nucl.P hys. A **505**, 267 (1989).
 - [2]. O. Benhar, A. Fabrocini, S. Fantoni, and I. Sick. *Spectral function of finite nuclei and scattering of GeV electrons*. Nucl.Phys. A **579**, 493 (1994).
 - [3]. O. Benhar, A. Fabrocini, and S. Fantoni. *Occupation probabilities and hole-state strengths in nuclear matter*. Phys. Rev. C **41**, R2 (1990).
 - [4]. O. Benhar, A. Fabrocini, and S. Fantoni. *Nuclear matter Green function in correlated-basis theory*. Nucl. Phys. **550**, 201 (1992).
 - [5]. O. Benhar, N. Farina, H. Nakamura, M. Sakuda, and R. Seki. *Electron- and neutrino-nucleus scattering in the impulse approximation regime*. Phys. Rev. D **72**, 053005 (2005).

- [6]. O. Benhar, D. Day, and I. Sick, *Inclusive quasielastic electron-nucleus scattering*. Rev. Mod. Phys. **80**, 189 (2008).
- [7]. O. Benhar, P Coletti, and D. Meloni. *Electroweak nuclear response in the quasielastic regime*. Phys. Rev. Lett. **105**, 132301 (2010).
- [8]. O. Benhar, V.R. Pandharipande, and S.C. Pieper. *Electron scattering studies of correlations in nuclei*. Rev. Mod. Phys. **65**, 817 (1993).
- [9]. O, Benhar, V. Ferrari, and L. Gualtieri. *Gravitational-wave asteroseismology reexamined*. Phys. Rev. D **70**, 124015 (2004).
- [10]. O. Benhar, A. Fabrocini, S. Fantoni, G.A. Miller, V.R. Pandharipande, and I. Sick. *Scattering of GeV electrons by nuclear matter*. Phys. Rev. C **44**, 2328 (1991)

The full publication list is available from

<https://scholar.google.com/citations?hl=it&user=4e2LluEAAAAJ>

- **Books**

- 2012 Luciano Maiani and Omar Benhar, *Relativistic Quantum Mechanics and Introduction to Quantum Field Theory*, Taylor & Francis, 2015.
- 2015 Nicola Cabibbo, Luciano Maiani, and Omar Benhar, *Introduction to Gauge Theories*, Taylor & Francis, 2017.
- 2020 Omar Benhar and Stefano Fantoni, *Nuclear Matter Theory*, Taylor & Francis, scheduled to be published in April, 2020.

- **Invited talks and lectures**

In the past decade, I have been invited to give talks at many international Conferences and Workshops (a total of about 80, 15 of which resulted in papers appeared in proceedings published in refereed journals), as well as to deliver seminars and colloquia in leading scientific institutions, and to lecture at a number of International Schools in Europe, the United States and Asia.