

BIOGRAPHICAL SKETCH

NAME: GABRIELLA VIERO

POSITION TITLE: SENIOR RESEARCHER CNR and PRINCIPAL INVESTIGATOR, PhD

EDUCATION/TRAINING

INSTITUTION AND LOCATION	DEGREE (if applicable)	Completion Date MM/YYYY	FIELD OF STUDY
University of Padua (Italy)	Master in Biological Sciences	07/07/1999	Biophysics/Cellular Biology
University of Verona (Italy)	PhD	06/08/2006	Biotechnologies applied to biomedical sciences

A. PERSONAL STATEMENT

My professional career started in 1999 when I earned a MD in Biomolecular Sciences (University of Padua – Italy). In 2006 I obtained a PhD in Biotechnologies Applied to Biomedical Sciences (Medical School, University of Verona – Italy). After being awarded three post doc fellowships by the Physics and Biotechnology Departments of the University of Trento, in 2011 I was awarded a permanent position as independent researcher at the Institute of Biophysics, National Research Council (CNR) in Italy, where I am Senior Researcher (i.e. Full Professor) and Principal investigator of a laboratory I established. In 2021 I earned the National Qualification as Full Professor in Molecular Biology (BIO/11) and the National Qualification as Associate Professor in Applied Biology (BIO/13) from the Italian Ministry of University and Research (MUR). I have a leader-oriented personality, which is characterized by curious, problem-solving, multicultural, multidisciplinary, team-oriented attitudes. I am stress-resilient but compassionate and prone to mediation.

My research is focused on studying translational control of gene expression and molecular mechanisms underlying Spinal Muscular Atrophy and Amyotrophic Lateral Sclerosis. The lab is seeking to move forward strong interdisciplinary approaches in biophysics, combining expertise in biophysics, biochemistry, mathematics, IT, neuropathology and cell biology. Over the years I managed groups of 10-15 lab members (master and PhD students and several post-docs), with whom I performed break-through research on SMA and ALS, opening up completely new explanations of the molecular mechanisms underlying these diseases. In this field I obtained several grants from national, European and American funding agencies and foundations. In the majority of these grants I acted in the capacity of coordinator of multiple scientific national and international units. This research produced tens of papers published in high impact journal in the last 5 years (Nat. Cell. Biol.; NAR; Sci.Adv.; Nat. Comm.; Cell Reports; Mol. Cell; Hum. Mol. Gen.; Bioinformatics and others).

In parallel to these activities in 2013 with Massimiliano Clamer I have been awarded the Start Cup D2T competition to found the start-up IMMAGINA – Ribo-Lace, based on a technology for which we hold a patent. I have been the scientific advisor of the start up until the end of 2022. From the beginning of 2023, in addition to leading my group at CNR, I am coordinator of a joint governmental-private initiative called eRIs (**enhanced Ribosome Innovations**), which is aimed at experiencing innovative R&D models and contaminations between governmental institutions and the biotech entrepreneurial milieu.

These experiences nicely complement my interests in Bioethics, Geopolitics and international activities in Science & Diplomacy. I attended a course on Science and Diplomacy in Barcelona (Spain) and a master in geopolitics (Rome, Italy) that are instrumental to international activities in my capacity as elected councilor of the International Union for Pure and Applied Biophysics (IUPAB) and IUPAB delegate at the International Science Council.

B. POSITIONS, SCIENTIFIC APPOINTMENTS AND HONORS

Positions and Employment

- **01.2021 – today** Permanent position senior researcher and Principal Investigator of the Laboratory of Translational Architectomics Institute of Biophysics –National Council for Research - Research in Biophysics and Genomics applied to SMA and ALS
- **09.2011 – 12.2020** Permanent position junior researcher and Principal Investigator of the Laboratory of Translational Architectomics. Institute of Biophysics –National Council for Research - Research in Biophysics and Genomics applied to SMA and ALS
- **02.2008 – 08.2011** Post-Doc Fellowship. Laboratory for Translational Genomics at the Center for Integrative Biology - University of Trento (Trento), Italy.
- **08.2006 – 02.2008** Post-Doc Fellowship. Department of Physics – University of Trento & CNR Institute of Biophysics (Trento) Italy
- **01.2006 – 08.2006** Post-Doc fellowship - CNR Institute of Biophysics (Trento), Italy Biophysical research
- **01.2002 – 12.2005** PhD fellowship University of Verona (Verona) - Italy
- **12.1999 – 12.2001** pre-doc Fellowship Electrophysiological Characterization of Equinatoxin X-Cys mutants Center for the Physics of Aggregate States CNR-ITC (Trento), Italy

Other Experiences and Scientific Appointments

Appointments PhD and institutional committees or councils:

2020- today - Elected councilor of the International Union of Pure and Applied Biophysics.

2020- today – IUPAB delegate at the International Science Council (ISC).

2016- today - Elected member of the Council of the Institute of Biophysics CNR, Italy.

2014 – today – Member of the PhD committee of the PhD School in Biological Sciences at the University of Trento (Italy).

2016-2020 – Founder and member of the panel for the Trans-disciplinary PhD program at the University of Trento (Italy).

Biotech scientific advisor

2016-2022 Scientific Advisor IMMAGINA Biotechnology S.r.l (<https://immaginabiotech.com/>).

Member of societies/association:

American Association for the Advancement of Science (AAAS)

International Union of Pure and Applied Biophysics

Member of Italian Society of Bioinformatics

Associazione Italiana Biologia e Genetica AIBG 2021

Mensa Italy

Società Italiana di Biofisica Pura e Applicata (SIBPA)

RNA Society

Project Reviewer

2022 – SMA Europe (UK)

2021 - Muscular Dystrophy (UK)

2019 - Agence nationale de la recherche (France)

2013 - ISF - International Foundation for Science

JCR Reviewer

Nature

Nature Reviews Mol. Cell Biol.

Science Advances

Translational Neurodegeneration

Acta Neuropathologica

Cell Reports

PLOS Genetics

Editorial activities

2022- Associate Editor Frontiers in RNA Research

2021- today Member of the editorial board Biophysical Reviews

Patents

Clamer, M., Viero, G., Guella, G. & Quattrone, A. New molecules for isolation of polyribosomes, uses and kits thereof. Patent WO2017013547 A1 - PCT/IB2016/054210.

Honors

- 2021 Short Term Mobility Fellowship– University of Edinburgh and Centre for Discovery Brain Sciences, Edinburgh (UK);
- 2018 Short Term Mobility Fellowship– Center for RNA Science and Medicine, Yale School of Medicine;
- 2013 Start up award - Start Cup D2T - IMMAGINA – Ribo-Lace
- 2013 Journalists award - Start Cup D2T- for IMMAGINA – Ribo-Lace;
- 2006 Best Italian PhD Thesis award in Biophysics (SIBPA).

C. CONTRIBUTIONS TO SCIENCE

I have attended more than 60 national and international congresses with more than 45 poster and more than 25 oral selected presentations. I was invited chair at EMBO Translational Control meeting (2023) and SMA Europe congress (2020). I am author or co-author of >60 papers in international journals, 4 book chapters and many contributions to congresses.

Selected Peer-reviewed Publications (Selected from 64 peer-reviewed publications)

Most relevant to the current application

1. Tapken I, Schweitzer T, Paganin M, Schüning T, Detering NT, Sharma G, Niesert M, Saffari A, Kuhn D, Glynn A, Cieri F, Santonicola P, Cannet C, Gerstner F, Faller KME, Huang YT, Kothary R, Gillingwater TH, Di Schiavi E, Simon CM, Hensel N, Ziegler A, **Viero G**, Pich A, Claus P. The systemic complexity of a monogenic disease: the molecular network of spinal muscular atrophy. *Brain*. 2025 Feb 3;148(2):580-596.
2. Lauria F, Bernabò P, Tebaldi T, Groen EJN, Perenthaler E, Maniscalco F, Rossi A, Donzel D, Clamer M, Marchioretto M, Omersa N, Orri J, Dalla Serra M, Anderluh G, Quattrone A, Inga A, Gillingwater TH, **Viero G**. SMN-primed ribosomes modulate the translation of transcripts related to spinal muscular atrophy. *Nat Cell Biol*. 2020 Oct;22(10):1239-1251
3. Groen EJN, Perenthaler E, Courtney NL, Jordan CY, Shorrock HK, van der Hoorn D, Huang YT, Murray LM, **Viero G**, Gillingwater TH. Temporal and tissue-specific variability of SMN protein levels in mouse models of spinal muscular atrophy. *Hum Mol Genet*. 2018 May 22. doi: 10.1093/hmg/ddy195.
4. Bernabò P, Tebaldi T, Groen EJN, Lane FM, Perenthaler E, Mattedi F, Newbery HJ, Zhou H, Zuccotti P, Potrich V, Shorrock HK, Muntoni F, Quattrone A, Gillingwater TH, **Viero G**. In Vivo Translatome Profiling in Spinal Muscular Atrophy Reveals a Role for SMN Protein in Ribosome Biology. *Cell Rep*. 2017 Oct 24;21(4):953-965
5. **Viero G***, Lunelli L, Passerini A, Bianchini P, Gilbert RJ, Bernabò P, Tebaldi T, Diaspro A, Pederzoli C, Quattrone A*. Three distinct ribosome assemblies modulated by translation are the building blocks of polysomes. *J Cell Biol*. 2015 Mar 2;208(5):581-96. * co-corresponding authors

Research Support

Ongoing Research Support

2025-2027 CURE SMA (US) – Responsible of Unit “REACT: Rebalancing the Epitranscriptional landscape as an AdvanCed Therapy in SMA”

2025-2027 SMA EUROPE (EU) - Full Grant Coordinator “Leveraging SMN role in translation to develop the next-gen of biomarkers for Spinal Muscular Atrophy”

2022-2026 Next Generation EU Italy – Principal Investigator “ National Centre for Gene Therapy and Drugs based on RNA Technology”

2022-2025 Caritro Research and Innovation (I)- Full grant Coordinator “Emerging biomarkers in Spinal Muscular Atrophy (SMA): development of a next -generation RNA-based toolkits to optimize clinical treatments.”

2022-2025 COST Action (EU)- TRANSLACORE

Completed Research Support

2021-2024 AFM-TELETHON (F): Full Grant Coordinator " "Ribosome-based functions of the SMN protein: from fundamental biology to second-generation therapies for SMA"

2020-2024 H2020-MSCA-ITN-2020 (EU): Scientist in charge SMABEYOND: Spinal Muscular Atrophy (SMA) beyond motoneuron degeneration: multi-system aspects

2019-2023 TELETHON (I): Full Grant Coordinator "The role of SMN protein in translation: implications for Spinal Muscular Atrophy"

2018-2021 ARISLA (I): Full Grant – Scientist in charge "Axonal translatoe in mouse models of Amyotrophic Lateral Sclerosis."

2017-2018 ALS Association (USA): Starter Grant - Principal Investigator "Tagfree axonal translatoe to reveal defects in mRNA transport and association to axonal polysomes in ALS/FTD."

2015-2018 Scientist in charge for RACE-Tn “Environmental risk of emergent contaminants in riverflows in Trentino: effects on wildlife and humans” Caritro Foundation (Italy)

2013-2017 "AXONOMICS: IDENTIFYING THE TRANSLATIONAL NETWORKS ALTERED IN MOTOR NEURON DISEASES" – Provincia Autonoma di Trento (Italy)

2014-2015: “Super-resolution imaging for understanding the role of local protein synthesis in motor-neurons in Amyotrophic Lateral Sclerosis” Cassa Rurale of Trento Foundation (Italy)

2009-2011 “Translational tuning in neuroblastoma cell lines by bacterial toxins” Caritro Foundation