

Giulia Fulvia Mancini

Nationality: Italian

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Languages: Italian (mother tongue), English (C2), French (C1), German (A1)

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<https://luxem.unipv.it/>



Professional Experience & Education

- 2021 – :** **Tenured Associate Professor in Physics**
P.I. of Laboratory for Ultrafast X-ray and Electron Microscopy (LUXEM)
Department of Physics, University of Pavia, Italy
Research expertise: Characterization of structure-property relationships, order-disorder correlations and light-activated functionality in nanostructured hybrid materials and interfaces, in the ultrafast (10^{-15} s) time and ultrasmall (10^{-10} m) domains. Development of novel experimental time-resolved approaches based on coherent diffractive imaging with structured beams and scattering non-linear techniques, bridging tabletop and facility X-rays with electrons pulsed sources.
- 2017 – 2021:** **Senior Scientist – Team Leader**
Swiss Free Electron Laser (SwissFEL, PSI) and École Polytechnique Fédérale de Lausanne, Laboratory for Ultrafast Spectroscopy (EPFL, LSU), Switzerland
Research expertise: Charge-carrier dynamics in functional oxides and perovskites. Development of ultrafast spectrometers (TR-XES, TR-RIXS) and correlative spectroscopy and diffraction experiments (TR-XAS and TR-XRD) at Free-Electron Lasers. SwissFEL and EXFEL beamline commissioning, pilot & users experiments.
- 2015 – 2017:** **Postdoctoral Research Associate**
JILA (Joint Institute for Laboratory Astrophysics), University of Colorado-Boulder and NIST, Kapteyn-Murnane Group (USA)
Research expertise: Dynamic, quantitative and record resolution in X-ray Coherent Diffractive Imaging (CDI) of nanostructured materials and interfaces using soft X-rays, from tabletop light sources based on High-order Harmonic Generation.
- 2010 – 2015:** **Ph.D. Degree in Chemistry and Chemical Engineering – *Special Distinction***
École Polytechnique Fédérale de Lausanne, Laboratory for Ultrafast Microscopy and Electron Scattering (EPFL, LUMES), Switzerland. Director: Prof. Fabrizio Carbone
Research expertise: Photo-induced ordering/disordering phenomena in ligand-capped nanoparticle supracrystals. Development of a state-of-the-art Ultrafast Electron Diffraction (UED) and Speckle Imaging system with tunable spatial coherence.
- 2008 – 2010:** **M. Sc. in Physical Chemistry – *summa cum laude***
Physical Chemistry Department, University of Pavia, Italy
Research topic: X-ray Absorption Spectroscopy (XAS), micro-Raman and EPR of Mn-doped SrTiO₃ ferroelectrics, and of Vanadium-based catalysts.
Diploma Degree in Science & Technology
University School for Advanced Studies IUSS – Pavia, Italy
- 2005 – 2008:** **B. Sc. in Physical Chemistry – *summa cum laude***
University of Pavia, Italy

Honors & Awards

- 2024:** **National Scientific Qualification to Full Professorship**
experimental physics of matter and applications (PHYS-03/A, 02/PHYS-03)
Italian Ministry of University and Research (MUR)
- 2021:** **ICO/IUPAP Young Scientist Prize in Optics**
for “contributions to imaging and scattering of nanostructured materials using high-harmonic soft X-ray sources and research on extreme ultraviolet imaging”
International Commission for Optics and The International Union of Pure and Applied Physics
- 2020:** **Mildred Dresselhaus Prize for Junior Researchers**
for “outstanding scientific achievements”
Cluster of Excellence “CUI: Advanced Imaging of Matter” - University of Hamburg
- 2019:** **Aspasia Prize** – awarded to top 3% ranked VIDI grant winners
Dutch Research Council (NWO)
- 2016:** **Special distinction for Ph.D. thesis**
“Femtosecond Diffractive Imaging of Structures, Charge and Spin Textures”
Research Commission - École Polytechnique Fédérale de Lausanne (EPFL), Switzerland
- 2014:** **SCNAT/SCS Chemistry Travel Award**
Invited talk at *Gordon Research Conference* “Noble Metal Nanoparticles” 2014
Swiss Chemical Society
- Teaching assistant award**
École Polytechnique Fédérale de Lausanne (EPFL), Switzerland

Funding ID & Career Advancement

- 2026:** *PI* of **ERC Proof of Concept 101271431 STUNNED** – 150'000 €
"Ultrafast, High-resolution, X-ray Microscopy for Nanometrology:
Single-shot Hyperspectral Ptychography in a Compact and Cost-effective Device"
European research Council (ERC)
- 2025:** **X-lites Executive Leadership Committee** – Formal representative of NEXT COST Action at the consortium "Extreme Light in Intensity, Time, and Space (X-lites) network"
Ohio State University
- 2023:** *PI* of **PRIN 2022 2022PR7CCY DynaMAT** – 207'477 €
"Ultrafast dynamics in next generation sustainable materials"
Italian Ministry of University and Research (MUR)
- 2023:** *Vice-Chair* and *co-PI* of **COST ACTION CA22148** – 680'000 €
"NEXT: An international network for Non-linear Extreme Ultraviolet to hard X-ray techniques"
European Research Council (ERC)
- 2023:** *PI* of **ERC Proof of Concept 101271431 HYPER** – 150'000 €
"Real-time, High-throughput, Coherent X-ray Microscopy:
from Large-Scale Installations to Tabletop Device"
European research Council (ERC)
- 2022:** *PI* of **FARE - MUR grant R207A8MNNJ PiXiE** – 378'880 €
"Tailoring intra- and inter-structural interactions in hybrid superlattices: correlative ultrafast X-ray and cryo-electron microscopy"
Italian Ministry of University and Research (MUR)
- Host PI* of **HORIZON-MSCA-2021-PF-01 DECIPHER** – 215'937 €
"Dynamic Electron Imaging with Phase Retrieval" – Dr. Charles Bevis
Marie Skłodowska-Curie Actions

- 2021:** *co-PI of Competence center for sustainable bio-nanotechnology – 1'012'500 €*
"Development of collaboration agreement with Universities for Research, Innovation and Technology Transfer"
Bando Regione Lombardia
- 2020:** *PI of **Fondazione Cariplo Grant 2020-2544 NanoFast** – 328'562 €*
"Probing functionality at the nanoscale: multimodal electron and soft X-ray ultrafast imaging"
Fondazione Cariplo
- 2020:** **Mildred Dresselhaus Guest Professorship** – 30'000 € in research & travel funding
The program provides excellent research conditions (funds for organizing workshops, travel funds, research budget, and housing costs) in order to enable the successful awardee to work within CUI for a period of two to six months and serve as a role model for young researchers in the physical sciences as well as attract world leading researchers to Hamburg.
Cluster of Excellence "CUI: Advanced Imaging of Matter" - University of Hamburg
- 2019:** *PI of **ERC Starting Grant 851154 ULTRAIMAGE** – 1'894'577 €*
"Advanced EUV/soft X-ray microscopy in the ultrafast regime: imaging functionality of nanomaterials across length scales"
European Research Council (ERC)
- 2019:** **ASPASIA Grant** – 50'000 €
For top-ranked VIDI grant winners towards the promotion to Associate Professor.
Dutch Ministry of Education, Culture and Science, the Association of Universities in the Netherlands, and the Dutch Research Council (NWO)
- 2019:** *PI of **VIDI-NWO Grant VI.Vidi.192.037** – 800'000 €*
"Controlling functionality in the ultrafast regime: advanced microscopy of nanoparticle superlattices"
Dutch Research Council (NWO)
- 2019:** **Rosalind Franklin Tenure-Track Assistant Professorship** – 800'000 €
University of Groningen
Dutch Ministry of Education, Culture and Science
- 2017:** **NCCR MUST: InterMUST Grant** – 90'000 CHF
Swiss National Science Foundation (SNSF)
- 2015:** *PI of **SNSF Early.PostDoc Mobility Grant (P2ELP2_158887)** – 51'000 CHF*
Swiss National Science Foundation (SNSF)

Memberships: International Evaluation Panels, Committees, Academic Societies

- 2026 – :** **DFG German Research Foundation** – Priority Programme SPP 2558 Panel member
- 2025 – :** **FERMI Free Electron Laser** – Proposal peer-Review Panel (PRP) member
FWO National Research Foundation Flanders – W&T2 Panel member
ETH Zurich Tenure-track in Inorganic Chemistry: selection committee member
- 2023 – :** **European X-ray Free Electron Laser (XFEL)** – User Organization Executive Committee
- 2022 – :** **NEXT - WavemiX**: International consortium for the development of nonlinear X-ray techniques
- 2021 – :** **ERC in Italy**: Italian network of ERC winners fostering Training, Outreach and Advising
- 2020 – :** **Laserlab-Europe AISBL** network for the development of advanced laser facilities
- 2017 – :** **OPTICA** – former **Optical Society of America (OSA)**
- 2017 – 2020:** **Swiss Physical Society (SPS)**
- 2013 – 2020:** **NCCR:MUST - Molecular Ultrafast Science and Technology Women Scientists**
- 2016 – 2017:** **NSF STROBE Science and Technology Center (USA)**

Reviewing Activities

- 2025 – :** **Grant External Reviewer:** Deutsche Forschungsgemeinschaft (DFG), Dutch Research Council (NWO), The European Cooperation in Science and Technology (COST)
- 2024 – :** **Grant External Reviewer:** LASERLAB-EUROPE AISBL research infrastructures
- 2023:** **Tenure Reviewer:** External evaluator for tenure promotion– Colorado School of Mines (USA)
- 2022 – :** **Grant External Reviewer:** Austrian Science Fund (FWF), Agency for the Promotion of European Research (APRE). **Proposal Reviewer:** Stanford Synchrotron Radiation Lightsource (SSRL)
- 2022 – :** **Peer-Reviewer for international editorial groups**, number of referrals in (): AAAS(3), ACA(4), ACS(15), Cell Press(5), Elsevier(7), Nature(8), OPTICA(15), Wiley(3), World Scientific(2)

Organization & Chair of International conferences and Technical Program Committees

- 2026:** **NICE 2026: "Nonlinear Imaging and Coherent Effects"** – 20-21 May 2026 Latisana (IT). Organizer.
- 2025:** **EOSAM: European Optical Society Annual Meeting.** Face2Phase meeting on computational imaging – 24-28 August 2025 Delft (NL). Program Committee Member.
- NEXT "An international network for Non-linear Extreme ultraviolet to hard X-ray Techniques" COST Action Annual Meeting**, 14-18 July 2025 Zagreb (HR). Organizer & Chair.
- FISMAT 2025 – CNISM: "From ultrafast magnetism to quantum materials: new insights with new instruments"** – 7-11 July 2025 Venice (I). Organizer & Chair.
- CLEO/Europe-EQEC 2025 Committee - Ultrafast Optical Science** – 23-27 June 2025 Munich (D). Program Committee Member.
- SPICE workshop "Characterization and control of quantum materials with optical vortex beams"** – 10-12 June 2025 Ingelheim (D). Organizer & Chair.
- 2024:** **NEXT "An international network for Non-linear Extreme ultraviolet to hard X-ray Techniques" COST Action Annual Meeting**, 8-12 July 2024 IMDEA Madrid (ES). Organizer & Chair.
- 2024 High Intensity Lasers and High Field Phenomena (HILAS 2024) - Technical Program** – OPTICA, 12-14 March 2024, Vienna (AT). Technical Committee Member & Chair.
- 2021 – 2024:** **Doctoral Colloquia in Physics**, University of Pavia (IT). Organizing Committee Member.
- 2017:** **Swiss Physical Society Annual Meeting** – 21-25 August 2025 Geneva (CH). Conference Chair.
- Summer Research Experience opportunities for Undergraduates** – NSF STROBE. JILA (USA). Organizer of Lectures and Seminars.
- 2013:** **1st Workshop in Ultrafast Electron Diffraction and Microscopy.** EPFL (CH). Co-organizer.

Editorial Activities

- 2026:** **Guest Editor for Small Structures (Wiley):** collection "Structure and dynamics of halide perovskite semiconductors"
- 2025 – :** **Associate Editor of Chemical Physics (Elsevier)** and member of the Editorial Board
- 2025:** **Invited perspective article in Communications Physics (Nature Springer):** imaging and study of materials, for the Collection "High-Energy Light Sources - From Tabletop to Large Facilities"

Presentations at International Conferences and Academic Institutions

Invited Talks

- EPDIC19: The 19th European Powder Diffraction Conference. Keynote Speaker at MS03 "Short-Range Order Using Total Scattering and XAS", Crans Montana, CH, June 2026.
- Condensed Matter Colloquium, Chalmers University of Technology, Gothenburg, SE, June 2026.
- SPIE Photonics Europe 2026, Nanophotonics XI, Strasbourg, FR, Apr. 2026.
- Materials for Sustainable Development - MATSUS Spring 2026 Conference, Barcelona, ES, Mar. 2026.
- 2026 Ultrafast Phenomena in Cooperative Systems Gordon Research Conference, Pomona CA, USA, Feb. 2026.
- 15th Science with FELs workshop, Ringberg (D), Feb. 2026.
- Advancements in High-Resolution Imaging using Next-Generation Light Sources, Trieste, I, July 2025.
- 2026 NEXT Cost Action Annual meeting, Zagreb, HR, July 2025.
- SPICE Workshop "Characterization and control of quantum materials with optical vortex beams", Wasem, D, June 2025.
- Master in Energy and Environmental Management and Economics (MEDEA), University of Pavia & ENI S.p.A., Pavia, I, June 2025. Keynote Speaker
- LCLS Users' Meeting workshop on tr-RIXS, Linac Coherent Light Source -SLAC National Accelerator Laboratory, Stanford, USA, Sept. 2024.
- 2024 SPIE Optics+Photonics - Physical Chemistry of Interfaces and Nanomaterials XXIII, San Diego CA, USA, Aug. 2024.
- CUI Advanced Imaging of Matter - Mildred Dresselhaus Conference, Hamburg, D, Mar. 2024.
- Bothe Colloquium, Max-Planck-Institut für Kernphysik, Heidelberg, D, Jan. 2024.
- Colorado School of Mines Colloquium Series - Physics Department, Golden CO, USA, Nov. 2023.
- NanoGe - Emerging Light Emitting Materials Conference, Paphos, CY, Nov. 2023.
- The Attosecond Chemistry (AttoChem) Annual Workshop of the COST Action CA 18222, Szeged, HU, Sept. 2023.
- Innovative strategies for the study of sustainable advanced nano-bio materials, National Academy of Sciences, Rome, I, Sept. 2023. Keynote Speaker.
- Smart-Electron Colloquium at the CMD30 Conference: Quantum Control of Electrons for Advanced Microscopies, Milan, I, Sept. 2023.
- The 7th International Symposium on Intense Field, Short Wavelength Atomic and Molecular Processes (ISWAMP 2023), Saint-Saveur, CA, July 2023.
- Materials for Sustainable Development Conference (MAT-SUS, NANOMAT), Barcelona, E, Oct. 2022.
- The 5th International Conference on Application of Optics and Photonics (AOP 2022), Guimarães, P, July 2022.
- Advances in Sustainable Bio- and Nano- Materials and Technologies, Como, I, June 2022.
- 2022 Multiphoton Processes Gordon Research Conference, Smithfield, USA, June 2022.
- MUST2022: International conference, Grindelwald, CH, June 2022.
- International Workshop "Fluctuation X-Ray Scattering", European XFEL. June 2021 *online*
- OSA Virtual Vision Science Seminars, invited by Technical Group (org. G. Vampa). May 2021 *online*
- Annual Meeting 2020 CUI: Advanced Imaging of Matter, University of Hamburg, DE. Oct. 2020 *online*
- Workshop in Time-Resolved Chemistry, Advanced Photon Source, Chicago IL, USA, Oct. 2019.
- Sixth Banff Meeting on Structural Dynamics, Alberta, Canada, Feb. 2019.
- Swiss Physical Society Annual Meeting, Lausanne, CH, Aug. 2018.
- 4th International Conference on Ultrafast Structural Dynamics, Trieste, I, Dec. 2017.
- Gordon Research Conference "Noble Metal Nanoparticles", South Hadley, USA, Jun. 2014.
- Italian National Conference on Condensed Matter Physics (FisMat), Milan, I, Sep. 2013.

Contributed Talks

- 21st International Conference on Ultrafast Phenomena (UP 2018). Hamburg, Germany. 2 talks. 2018.
- Femtochemistry Conference (FEMTO13). Cancun, Mexico. Aug. 2017
- 20th International Conference on Ultrafast Phenomena (UP 2016). Santa Fe, USA. 2 talks. Jul. 2016
- OSA High-Brightness Sources and Light-Driven Interactions Congress. Long Beach, USA. 2016
- Femtosecond Electron Imaging and Spectroscopy (FEIS-2) 2015. Lansing, Michigan USA. May 2015

- Ultrafast Dynamic Imaging of Matter (UDIM) 2015. Grindelwald, CH. Mar. 2015
- Molecular Ultrafast Science and Technology (MUST) Annual Meeting 2015. Engelberg, CH. 2015
- 19th International Conference on Ultrafast Phenomena (UP 2014). Okinawa, Japan. Jul. 2014

Commission of Trust & Service

- Associate Professor** – Italy
- Research Commission of the Physics Department – member since 2026.
 - Doctoral School in Physics – Faculty Council “Collegio Docenti” member, since 2024.
 - Doctoral School in Physics – member of the PhD Fellowships Selection Committee, July 2023.
 - UniPv formal representative at public events with policy makers
 - Looking4 – 30th Anniversary of Cariplo Foundation, Pavia (IT), June 2022.
 - Stati Generali of Regione Lombardia, Monza (IT), Sept. 2021.
 - Deputy for Technology & Infrastructure upgrade – HighLight@UniPv, 2021-2024.
 - ERC StG, CoG, SyG EU grants interview internal reviewer (ERCinItaly), since 2021.
 - Selection Committee, Internal Grant Review & mentorship for Graduate, PostDoctoral and Teaching Assistants – University of Pavia, since 2021.
 - PhD thesis external reviewer for Politecnico di Milano (G. Crippa), EPFL (P. Usai), University of Salamanca (R. Martín-Hernández), since 2023.
 - Scientific Board Advisor – Foundation Santa Caterina University College (Italy), since 2022.

- Senior Research Associate** – Switzerland, 2017-2021
- SwissFEL experimental coordinator and beamtime local contact.
 - LSU deputy at users Meeting and Workshops at large-scale facilities:
 - EXFEL and DESY Early Users Meeting. Germany (2018).
 - SCS and MID Early Users Meeting. Germany (2018).
 - Assessment committee – PhD student candidacy exam, EPFL, Switzerland.
 - Committee member – trainer for Faculty and PhD defense talks.

- Postdoctoral Research Associate** – USA, 2015-2017
- Presenter at formal grant review meetings:
 - EPIQS Gordon and Betty Moore Foundation, Aspen (2/2017)
 - DARPA PULSE, Berkeley (4/2016) & Arlington (4/2017).
 - NSF STROBE Retreat, Berkeley (1/2017).
 - Technology Transfer: 1 patent deposited and 1 licensed, R&D coordinator DARPA & KMLabs Inc.

Supervision and mentoring of junior researchers

- 2021 – :** **B. Sc. thesis director:** D. Berardi.
M. Sc. thesis director: A. Gualandi, F. Bertelli, G. L. Ignaccolo, D. Compagnini.
Doctoral thesis director: A. E. Mazzarone, C. Grova, S. Restelli (completed).
Postdoctoral researcher: Dr. C. A. M. Schrama, Dr. C. S. Bevis.
Laboratory Engineer: N. Giani.
Executive Coordinator: G. Lallo.
University of Pavia (IT)
- 2017 – 2021:** **Doctoral thesis co-director:** O. Cannelli.
SwissFEL, PSI and EPFL (CH)
- 2015 – 2017:** **Supervisor - completed PhDs:** D. Gardner, E. Shanblatt, C. Porter, R. Karl, C. S. Bevis, M. Tanksalvala.

JILA (USA)

2013 – 2015: **Supervisor - completed PhDs:** F. Pennacchio
Supervisor - completed M.Sc.: S. Pagano
EPFL (CH)

Teaching

2023 – : **Reference Lecturer – M.Sc. in Physics.** University of Pavia (IT).
– Ultrafast Laser Physics and Methods

2021 – : **Lecturer – Doctoral School in Physics.** University of Pavia (IT).
– Ultrafast Laser Physics
– Soft -Skills For Graduate Students
– Fourier and Physical Optics

Reference Lecturer – B.Sc. in Biotechnology. Experimental Physics. University of Pavia (IT).

2017: **Co-Lecturer.** Ultrafast imaging with electron and soft X-ray pulsed sources.
Summer Research Experience opportunities for Undergraduates – NSF STROBE. JILA.

2014: **Co-Lecturer.** Symmetry retrieval in colloidal nanoparticles.
Structural Properties of Condensed Matter (Prof. Fabrizio Carbone). EPFL.

2013 – 2014: **Teaching assistant.** General Physics I for Civil Engineering (Prof. Davor Pavuna). EPFL.

2011 – 2013: **Teaching assistant.** General Physics II for Civil Engineering (Prof. Fabrizio Carbone). EPFL.

Organizing Committee of Training Schools for Young Researchers

2026: COST/ZCAM school on “**New Computational Methods for Attosecond Molecular Processes**”
Zaragoza (Spain) Zaragoza (Spain): June 1-5, 2026

2025: Erice COST Training School “**The Frontiers of Attosecond and Ultrafast X-ray Science**”
Erice (Italy): April 7-13, 2025

COST/ZCAM school on “**New Computational Methods for Attosecond Molecular Processes**”
Zaragoza (Spain): May 26-30, 2025

Outreach, Mentorship & Gender Balance in STEM disciplines

2024 – : **INFN Lab2Go & UniPaviaExperience Lab Tours** – participation in activities aimed to showcase laboratory and research to High School students with practical demonstrations & support High Schools towards the improvement of their laboratory facilities.

2023 – : **European Researchers Night** – communication to the public of scientific research topics with stand and practical experiments.
"Sumo Science" and "Meeting with the researchers" – STEM disciplines dissemination in high schools.

2022 – : **Mentor for young female researchers in science:**
– Experiences of Women in Science - Mentoring event, University of Pavia and AISF, I
– Mentor for DynaMENT mentoring program, University of Hamburg and CUI, D

2014 – 2017: **Mentee – in associations/initiatives for women in science:**
– NCCR:MUST Molecular Ultrafast Science and Technology Women Scientists, CH
– Women in Science Association, University of Colorado Boulder, USA
– Fix the Leaky Pipeline Program for female Researchers in the ETH Domain, CH