

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

- The 2027 MRS Spring Meeting & Exhibit, Seattle WA, USA, April 2027.
- The 2026 Frontiers in Optics + Laser Science Conference (FiO LS), Rochester NY, USA. September 2026.
- Keynote. EPDIC19: The 19th European Powder Diffraction Conference. 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, April 2026.
- Materials for Sustainable Development - MATSUS Spring 2026 Conference, Barcelona, ES, March 2026.
- 2026 Ultrafast Phenomena in Cooperative Systems Gordon Research Conference, Pomona CA, USA, February 2026.
- 15th Science with FELs workshop, Ringberg, D, February 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.
- Keynote. Master in Energy and Environmental Management and Economics (MEDEA), University of Pavia & ENI S.p.A., Pavia, I, June 2025.
- LCLS Users' Meeting workshop on tr-RIXS, Linac Coherent Light Source -SLAC National Accelerator Laboratory, Stanford, USA, September 2024.
- 2024 SPIE Optics+Photonics - Physical Chemistry of Interfaces and Nanomaterials XXIII, San Diego CA, USA, August 2024.
- CUI Advanced Imaging of Matter - Mildred Dresselhaus Conference, Hamburg, D, March 2024.
- Bothe Colloquium, Max-Planck-Institut für Kernphysik, Heidelberg, D, January 2024.
- Colorado School of Mines Colloquium Series - Physics Department, Golden CO, USA, November 2023.
- NanoGe - Emerging Light Emitting Materials Conference, Paphos, CY, November 2023.
- The Attosecond Chemistry Annual Workshop of the COST Action CA18222, Szeged, HU, September 2023.
- Keynote. Innovative strategies for the study of sustainable advanced nano-bio materials, National Academy of Sciences, Rome, I, September 2023.
- Smart-Electron Colloquium at the CMD30 Conference: Quantum Control of Electrons for Advanced Microscopies, Milan, I, September 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, October 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. October 2020. *online*
- Workshop in Time-Resolved Chemistry, Advanced Photon Source, Chicago IL, USA, October 2019.
- Sixth Banff Meeting on Structural Dynamics, Alberta, Canada, February 2019.
- Swiss Physical Society Annual Meeting, Lausanne, CH, August 2018.
- 4th International Conference on Ultrafast Structural Dynamics, Trieste, I, December 2017.
- Gordon Research Conference "Noble Metal Nanoparticles", South Hadley, USA, June 2014.
- Italian National Conference on Condensed Matter Physics (FisMat), Milan, I, September 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 – :	Doctoral thesis director:	F. Bertelli, A. E. Mazzarone, C. Grova, S. Restelli.
	Postdoctoral researchers:	Dr. C. A. M. Schrama, Dr. C. S. Bevis.
	M.Sc. thesis director:	A. Gualandi, F. Bertelli, G. L. Ignaccolo, D. Compagnini, A. E. Mazzarone.
	B. Sc. thesis director:	D. Berardi.
	Laboratory Engineer:	N. Giani.
2017 – 2021:	Executive Coordinator:	G. Lallo.
	University of Pavia (IT)	
	Doctoral thesis co-director:	O. Cannelli.
	SwissFEL, PSI and EPFL (CH)	

2015 – 2017:	Ph.D. co-Supervisor: JILA (USA)	D. Gardner, E. Shanblatt, C. Porter, R. Karl, C. S. Bevis, M. Tanksalvala.
2013 – 2015:	Ph.D. co-Supervisor: M.Sc. co-Supervisor: EPFL (CH)	F. Pennacchio S. Pagano

Teaching

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