

## Giulia Fulvia Mancini

Nationality: Italian

Date of birth: 29.12.1986

Google Scholar ID: Giulia Fulvia Mancini

ORCID: 0000-0002-7752-2822

Scopus Author ID: 57201126139

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

Email: [giuliafulvia.mancini@unipv.it](mailto:giuliafulvia.mancini@unipv.it)



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### Professional Experience & Education

- 2021 – now:**     **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.
- 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.
- 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 SrTiO<sub>3</sub> ferroelectrics, and of Vanadium-based catalysts.  
**Diploma Degree in Science & Technology**  
University School for Advanced Studies IUSS – Pavia, Italy
- 2008:**     **B. Sc. in Physical Chemistry – *summa cum laude***  
University of Pavia, Italy

## Honors & Awards

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- 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”
- 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** - recognition from NWO of top-ranked VIDI grant candidates  
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

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- 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
- 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)
- 2023:** **PI of PRIN 2022 2022PR7CCY DynaMAT**  
"Ultrafast dynamics in next generation sustainable materials"  
Italian Ministry of University and Research (MUR)
- 2023:** **Vice-Chair and co-PI of COST ACTION CA22148**  
"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 HYPER**  
"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**  
"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**  
"Dynamic Electron Imaging with Phase Retrieval" – Dr. Charles Bevis  
Marie Skłodowska-Curie Actions
- 2021:** **co-PI of Competence center for sustainable bio-nanotechnology**  
"Development of collaboration agreement with Universities for Research, Innovation and Technology Transfer"  
Bando Regione Lombardia
- 2020:** **PI of Fondazione Cariplo Grant 2020-2544 NanoFast**  
"Probing functionality at the nanoscale: multimodal electron and soft X-ray ultrafast imaging"  
Fondazione Cariplo

- 2020: Mildred Dresselhaus Junior Prize & Guest Professorship**  
The program provides excellent research conditions (funds for organizing workshops, travel funds, research budget, and housing costs) in order to enable a successful female researcher to work within CUI for a period of two to six months and serve as a role model for young women 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 ULTRAIMAGE**  
"Advanced EUV/soft X-ray microscopy in the ultrafast regime: imaging functionality of nanomaterials across length scales"  
European Research Council (ERC)
- 2019: ASPASIA Grant**  
Funded to encourage the promotion of top-ranked VIDI grant female candidates to an associate professorship through a fast (2 years) tenure-track.  
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**  
"Controlling functionality in the ultrafast regime: advanced microscopy of nanoparticle superlattices"  
Dutch Research Council (NWO)
- 2019: Rosalind Franklin Tenure-Track Assistant Professorship**  
University of Groningen  
Dutch Ministry of Education, Culture and Science
- 2017: NCCR MUST: InterMUST Grant**  
Swiss National Science Foundation (SNSF)
- 2015: PI of SNSF Early.PostDoc Mobility Grant (P2ELP2\_158887)**  
Swiss National Science Foundation (SNSF)

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### Organization of International Scientific Conferences, Colloquia & Program Committees

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- 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: 1<sup>st</sup> Workshop in Ultrafast Electron Diffraction and Microscopy.** EPFL (CH). Co-organizer.

## Membership of Peer-Review Panels, Committees, Academic Societies & Organizations

- 2025 – now:** Member of the **Proposal Review Panel (PRP) – FERMI Free Electron Laser**  
Panel member of the **National Research Foundation Flanders (FWO) – W&T2**  
Member of the selection committee for **ETH Zurich – Tenure-track in inorganic Chemistry**
- 2023 – now:** **User Organization Executive Committee (UOEC) of the European XFEL:** elected member
- 2022 – now:** **NEXT - WavemiX:** International consortium for the development of nonlinear X-ray techniques
- 2021 – now:** **ERC in Italy:** Italian network of ERC winners fostering Training, Outreach and Advising  
**INROAD+:** Grant applicants funding & mentoring platform – University of Pavia
- 2019 – now:** **LaserLab Europe:** European network facilitating the development & efficient utilization of advanced laser facilities by users from academia and industry
- 2016 – now:** **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)**
- 2014 – 2016:** **Swiss Chemical Society (SCS)**

## Reviewing Activities

- 2025 - now:** **Grant Reviewer:** Research Foundation Flanders (FWO), Dutch Research Council (NWO), COST Association (EU).
- 2024 - now:** **Grant Reviewer:** LASERLAB-EUROPE research infrastructures (EU).
- 2023:** **Tenure Reviewer:** External evaluator for tenure and promotion to Associate professorship – Colorado School of Mines (USA).
- 2022 - now:** **Grant Reviewer:** Austrian Science Fund (FWF), Agency for the Promotion of European Research (APRE).  
**Project Review Panel (PRP):** Stanford Synchrotron Radiation Lightsource (SSRL).
- Since 2015:** **Peer-Review in Scientific Journals** – Editorial groups: AAAS, ACA, ACS, Cell Press, Elsevier, Nature, OPTICA, World Scientific.

## Presentations at International Conferences

### **Invited Talks**

- 2026 Ultrafast Phenomena in Cooperative Systems Gordon Research Conference, Pomona CA, USA, Feb. 2026.
- 2026 SPIE Photonics West - Complex Light and Optical Forces XX, San Francisco CA, USA, Jan. 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.
- Keynote speaker - Master in Energy and Environmental Management and Economics (MEDEA), University of Pavia & ENI S.p.A., Pavia, I, June 2025.
- SPICE Workshop “Characterization and control of quantum materials with optical vortex beams”, Wasem, D, June 2025.
- 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.

- Innovative strategies for the study of sustainable advanced nano-bio materials, National Academy of Sciences, Rome, I, Sept. 2023.
- The Attosecond Chemistry (AttoChem) Annual Workshop of the COST Action CA 18222, Szeged, HU, Sept. 2023.
- 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.
- 4<sup>th</sup> 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

- 21<sup>st</sup> International Conference on Ultrafast Phenomena (UP 2018). Hamburg, Germany. 2 talks. 2018.
- Femtochemistry Conference (FEMTO13). Cancun, Mexico. Aug. 2017
- 20<sup>th</sup> 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
- 19<sup>th</sup> International Conference on Ultrafast Phenomena (UP 2014). Okinawa, Japan. Jul. 2014

### Commission of Trust & Service

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| <b>Associate Professor –</b><br>Italy             | <ul style="list-style-type: none"> <li>– <u>Doctoral School in Physics – Teaching Body member</u>, University of Pavia.</li> <li>– <u>UniPv formal representative</u> at public events with policy makers           <ul style="list-style-type: none"> <li>○ Looking4 – 30th Anniversary of Cariplo Foundation.</li> <li>○ Stati Generali of Regione Lombardia.</li> </ul> </li> <li>– <u>Deputy for Technology &amp; Infrastructure upgrade</u> – HighLight@UniPv.</li> <li>– <u>ERC StG, CoG, SyG</u> EU grants interview internal reviewer (ERCinItaly)</li> <li>– <u>Selection Committee, Internal Grant Review &amp; mentorship</u> for Graduate, PostDoctoral and Teaching Assistants – University of Pavia.</li> <li>– <u>PhD thesis external reviewer</u> for Politecnico di Milano (G. Crippa), EPFL (P. Usai), University of Salamanca (R. Martín-Hernández).</li> <li>– <u>Scientific Board Advisor</u> – Foundation Santa Caterina University College (Italy).</li> </ul> |
| <b>Senior Research Associate –</b><br>Switzerland | <ul style="list-style-type: none"> <li>– <u>SwissFEL experimental coordinator</u> and beamtime local contact.</li> <li>– <u>LSU deputy at users Meeting and Workshops at large-scale facilities</u>:           <ul style="list-style-type: none"> <li>○ EXFEL and DESY Early Users Meeting. Germany (2018).</li> <li>○ SCS and MID Early Users Meeting. Germany (2018).</li> </ul> </li> <li>– <u>Assessment committee</u> – PhD student candidacy exam, EPFL, Switzerland.</li> <li>– <u>Committee member</u> – trainer for Faculty and PhD defense talks.</li> </ul>  |
| <b>Postdoctoral Research Associate –</b> USA      | <ul style="list-style-type: none"> <li>– <u>Presenter at formal grant review meetings</u>:           <ul style="list-style-type: none"> <li>○ EPIQS Gordon and Betty Moore Foundation, Aspen (2/2017)</li> <li>○ DARPA PULSE, Berkeley (4/2016) &amp; Arlington (4/2017).</li> <li>○ NSF STROBE Retreat, Berkeley (1/2017).</li> </ul> </li> </ul>  |

- Technology Transfer: 1 patent deposited and 1 licensed, R&D coordinator DARPA & KMLabs Inc.

## Supervision and mentoring of junior researchers

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- 2021 – now:**     **B. Sc. thesis director:** D. Berardi.  
                      **M. Sc. thesis director:** F. Bertelli, G. L. Ignaccolo, D. Compagnini.  
                      **Doctoral thesis director:** A. E. Mazzarone, C. Grova, S. Restelli.  
                      **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

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- 2023 - now:**     **Reference Lecturer – M.Sc. in Physics.** University of Pavia (IT).  
                              - Ultrafast Laser Techniques for Solid State
- 2021 - now:**     **Lecturer – Doctoral School in Physics.** University of Pavia (IT).  
                              - Ultrafast Laser Physics  
                              - Soft -Skills For Graduate Students
- 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

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- 2025 - now:**     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

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- 2024 - now:**     **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 - now:**     **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 - now: 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