

## Giulia Fulvia Mancini

Nationality: Italian

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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 topics:** Time-resolved soft X-ray and electron coherent diffractive imaging of nanomaterials, structure-property relations, light-activated functionality.
- 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 topics:** Charge-carrier dynamics in functional oxides and perovskites (TR-XAS and TR-XES, TR-RIXS). Beamline commissioning, pilot & users experiments at SwissFEL Bernina.
- 2015 – 2017:**      **Postdoctoral Research Associate**  
JILA (Joint Institute for Laboratory Astrophysics), University of Colorado-Boulder and NIST, Kapteyn-Murnane Group (USA)  
**Research topics:** Dynamic X-ray Coherent Diffractive Imaging (CDI) of nanostructured materials and interfaces using soft X-rays, 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 topics:** Ultrafast Electron Diffraction (UED). Green-field design and implementation, Photo-induced ordering/disordering phenomena of ligand-capped nanoparticle supracrystals. Cryo-Lorentz Transmission Electron Microscopy: diffractive imaging of skyrmion spin textures.
- 2010:**              **M. Sc. in Physical Chemistry – *summa cum laude***  
Physical Chemistry Department, University of Pavia, Italy  
**Research topics:** 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

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## Honors & Awards

- 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**  
NWO - Netherlands Organisation for Scientific Research
- 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
- 2014:** **Teaching assistant award**  
École Polytechnique Fédérale de Lausanne (EPFL), Switzerland

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## Awarded Grants & Career Advancement

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- 2023:** **PI of PRIN 2022 2022PR7CCY DynaMAT**  
“Ultrafast dynamics in next generation sustainable materials”  
**Italian Ministry of University and Research (MUR)**
- 2023:** **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 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**
- 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 NWO**

- 2019:** *PI of VIDI-NWO Grant VI.Vidi.192.037*  
“Controlling functionality in the ultrafast regime: advanced microscopy of nanoparticle superlattices”  
**NWO - Netherlands Organisation for Scientific Research**
- 2019:** **Rosalind Franklin Tenure-Track Assistant Professorship**  
University of Groningen
- 2017:** **NCCR MUST: InterMUST Grant**  
**Swiss National Science Foundation**
- 2015:** *PI of SNSF Early.PostDoc Mobility Grant (P2ELP2\_158887)*  
**Swiss National Science Foundation**

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## **Presentations at International Conferences**

### **Invited Talks**

- 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.
- SMART-ELECTRON COLLOQUIUM at the CMD30 CONFERENCE: Quantum Control of Electrons for Advanced Microscopies, Milani, 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.
- Gordon Research Conference “Multiphoton Processes”, 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

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## **Supervision and mentoring of junior researchers**

- 2021 – now:** **Doctoral thesis director:** C. Grova, S. Restelli.  
**Postdoctoral researcher:** Dr. C. S. Bevis. Dr. K. Ahmadi.  
**Technicians:** Dr. N. Giani, G. Lallo.  
University of Pavia (IT)
- 2017 – 2021:** **Doctoral thesis co-director:** O. Cannelli. EPFL  
SwissFEL, PSI and EPFL (CH)

- 2015 – 2017:** **Supervisor - completed PhDs:** D. Gardner, E. Shanblatt, C. Porter, R. Karl, C. S. Bevis, M. Tanksalvala.  
JILA (U.S.A.)
- 2013 – 2015:** **Supervisor - completed PhDs:** F. Pennacchio  
**Supervisor - completed M.Sc.:** S. Pagano  
EPFL (CH)

## Teaching

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- 2023:** **Reference Lecturer for M.Sc. Physics.** Ultrafast Laser Techniques for the Solid State.
- 2021:** **Lecturer - Doctoral School in Physics.** University of Pavia (IT).  
- Ultrafast Laser Physics  
- Professional soft skills development for academia & industry  
**Reference Lecturer for B.Sc. Biotechnology.** General Physics I
- 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.

## Reviewing Activities

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- Since 2022 :** **Grant Reviewer:** Austrian Science Fund (FWF), APRE – Agency for the Promotion of European Research.  
**Project Review Panel (PRP):** Stanford Synchrotron Radiation Lightsource (SSRL).
- Since 2015 :** **Peer – Review in Journals:** Optica & Opt. Lett. (OPTICA), ACS Nano, Nano Letters & J. Phys.Chem. (ACS); Science Advances (AAAS); Matter (Cell Press); Ultramicroscopy & Chemical Physics (Elsevier); Structural Dynamics (ACA); Surface Review and Letters (World Scientific); Crystals (MDPI).

## Membership of Scientific Societies & Academic Organizations

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- 2023 – now :** **User Organization Executive Committee (UOEC) of the European XFEL:** elected member.
- 2022 – now:** **ERC in Italy:** Italian network of ERC winners fostering Training, Outreach and Advising
- 2021 – now:** **WavemiX - NEXT:** International consortium for the development of nonlinear X-ray techniques  
**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)**

## Commission of Trust & Service

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- Associate Professor – Italy**
- UniPv formal representative at Looking4 – 30th Anniversary of Cariplo Foundation.
  - UniPv formal representative at Stati Generali of Regione Lombardia.
  - Scientific Board Advisor - Foundation Santa Caterina University College (Italy).
  - Deputy for Technology & Infrastructure upgrade - HighLight@UniPv
- Senior Research Associate – Switzerland**
- Conference Chair, Swiss Physical Society annual meeting. Geneva, Switzerland.
  - 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**
- 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.

## Organization of Scientific Meetings & Seminars

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- 2021 – now:** **Organizer:** Doctoral Colloquia - Member of the Organizing Committee. Cycle of seminars held by internationally renowned scientists and aimed at students of the Doctoral School in Physics, University of Pavia.
- 2017:** **Organizer:** Lectures and Seminars. Ph.D. level. Summer Research Experience opportunities for Undergraduates – NSF STROBE. JILA
- 2014:** **Organizer:** Lectures and student activities. M. Sc. Level. Structural Properties of Condensed Matter. École Polytechnique Fédérale de Lausanne, Switzerland
- 2013:** **Co-organizer:** First Workshop in Ultrafast Electron Diffraction and Microscopy. EPFL, CH

## Outreach

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- 2022:** **Sumo Science** – Participation to the National Championship 2022/23 – Sharper. STEM disciplines dissemination platform in High Schools. European Researchers Night
- Since 2015:** **Mentoring for Women in Science:**
- “Stories by the fireplace” - sharing career path with the mentees of dynaMENT mentoring program, University of Hamburg, D
  - 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