

Giulia Fulvia Mancini

Nationality: Italian

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

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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 SrTiO₃ 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

- 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

Awarded Grants & Career Advancement

- 2024:** National Scientific Qualification to Full Professorship - experimental condensed matter physics (02/B1) - **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 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

Presentations at International Conferences

Invited Talks

- SPIE Optics+Photonics - Physical Chemistry of Interfaces and Nanomaterials XXIII, San Diego, USA, Aug. 2024.
- 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.
- 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.
- 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

Supervision and mentoring of junior researchers

- 2021 – now:** **B. Sc. thesis director:** D. Berardi.
M. Sc. thesis director: A. Mazzarone, D. Compagnini.
Doctoral thesis director: C. Grova, S. Restelli.
Postdoctoral researcher: Dr. C. S. Bevis.
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

- 2023 - now:** **Reference Lecturer for M.Sc. Physics.** University of Pavia (IT).
- Ultrafast Laser Physics and Techniques for Soft - Condensed Matter
- 2021 - now:** **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. 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.

Reviewing Activities

- 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:** Nature Materials (Nature), Optica & Opt. Expr. & 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

- 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

- Associate Professor** – Italy – UniPv formal representative at Looking4 – 30th Anniversary of Cariplo Foundation.
– UniPv formal representative at Stati Generali di 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

- 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

- 2022 - now:** **European Researchers Night & Sumo Science** – Participation to the National Championship 2022/23 – Sharper. STEM disciplines dissemination platform in High Schools.
- Since 2015:** **Mentoring for Women in Science:**
 - Mentor for DynaMENT mentoring program, University of Hamburg and CUI, 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