



# Deborah Fiorini

📍 **Work :** Via dell'Innovazione, 10 - U9 building, Piazza della Scienza, 1 - U1 building,  
20126, Milan, Italy

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👤 **ResearchGate:** <https://www.researchgate.net/profile/Deborah-Fiorini>

**Gender:** Female **Date of birth:** 13/01/1993 **Nationality:** Italian

## WORK EXPERIENCE

### *University Milano - Bicocca*

**City:** Milan | **Country:** Italy

[ 01/07/2025 – Current ] **Healty and Prevention service**

Servizio Prevenzione e Protezione (SPP) technician for physical risks

### *University Milano - Bicocca and University of Milan*

[ 09/2023 – Current ] **Teacher for School-University transition (PNRR)**

Teaching for the "Hai mai letto un libro di ghiaccio?" project connected to the PNRR paths, for the Active orientation in transition action School-University (M4C1-24)

### *M. K. GANDHI Higher Education Institute*

**City:** Milan | **Country:** Italy

[ 20/09/2024 – 30/06/2025 ] **Tutor for the STEMPHATY and LANGUAGES PLUS project**

Self-employment contract - Competenze STEM e multilinguistiche (D.M. 65/2023)

[ 06/2012 – 07/2012 ] **Stage at Istituto Nazionale della Previdenza Sociale (INPS)**

Assistant to an employer of INPS Varese office (8 hours a day)

**City:** Varese | **Country:** Italy

[ 06/2011 – 07/2011 ] **Stage at Istituto Nazionale della Previdenza Sociale (INPS)**

Assistant to the director of INPS Varese office (8 hours a day)

## EDUCATION AND TRAINING

[ 01/11/2022 – Current ] **PhD - Chemical, Geological and Environmental Sciences**

*Department of Earth and Environmental Sciences, University Milano-Bicocca*  
<https://www.unimib.it/>

**City:** Milan | **Country:** Italy | **Field(s) of study:** Natural sciences, mathematics and statistics

[ 30/09/2024 – 03/03/2025 ] **Erasmus+ Traineeship for International Mobility**

*Institut des Géosciences de l'Environnement (IGE-UGA)* [https://openbadges.bestr.it/public/assertions/gprUPH2iSwqBGLkyRSh\\_2g](https://openbadges.bestr.it/public/assertions/gprUPH2iSwqBGLkyRSh_2g)

**City:** Grenoble | **Country:** France |

**Link:** [https://openbadges.bestr.it/public/assertions/gprUPH2iSwqBGLkyRSh\\_2g](https://openbadges.bestr.it/public/assertions/gprUPH2iSwqBGLkyRSh_2g)

[ 28/04/2024 – 02/06/2024 ] **Research activity in the USA**

**Central Washington University (CWU)** <https://www.cwu.edu/academics/index.php>

**City:** Ellensburg (WA) | **Country:** United States | **Field(s) of study:** Natural sciences, mathematics and statistics

Analysis of single Light Absorbing Impurities (LAI) from created standards and natural samples from ice cores, entrapped within polished araldite resin pucks. Using a Hyperspectral Imaging Microscope Spectrometer (HIMS), has been possible to extract reflectance spectra for organic and inorganic materials.

[ 30/09/2024 – 03/03/2025 ]

### Research activity in France

**Institut des Géosciences de l'Environnement (IGE-UGA)** <https://www.ige-grenoble.fr/>

**City:** Grenoble | **Country:** France | **Field(s) of study:** Natural sciences, mathematics and statistics: • *Physics*

Around 45 ice-cores thin sections have been created using a microtome and then analysed with an Automatic Ice Texture Analyzer (AITA). The aim was to extract orientations and dimensions of ice-cores crystals.

[ 22/09/2020 – 25/10/2022 ]

### MSc Degree - Particles and Applied Physics

**Department of Physics, University Milano-Bicocca** <https://www.unimib.it/>

**Address:** Piazza della Scienza, 3, 20126, Milano, Italy | **Field(s) of study:** Particle Physics and Applied Physics - F1701Q-002 | **Level in EQF:** EQF level 7 | **Type of credits:** CFU | **Number of credits:** 120 | **Thesis:** Development of a continuous flow analysis system to study geometrical and optical proprieties of the insoluble mineral dust in ice cores and snow

The university career gave me great teamwork abilities suitable for multicultural environments and good communication skills

[ 25/08/2014 – 01/04/2020 ]

### BSc Degree - Physics

**Department of Physics, University Milano-Bicocca** <https://www.unimib.it/>

**Address:** Piazza della Scienza, 3, 20126, Milano, Italy | **Field(s) of study:** Physics | **Level in EQF:** EQF level 6 | **Type of credits:** CFU | **Number of credits:** 180 | **Thesis:** Study on the quality of ultra-superficial alpha sources from short-medium half-life radioactive chains

The Bachelor Degree in Physics gave me excellent skills in laboratory work together with a strong foundation in Physics and Mathematics. Moreover, I acquired great abilities to deal with laboratory instruments, electronic chains, radioactive sources and other experimental analysis skills

### High School Studies

**ITC - I.G.E.A. - ISIS Valceresio** <https://www.isisbisuschio.edu.it/>

**Address:** Via Roma, 57, 21050, Bisuschio, Italy | **Field(s) of study:** ITC - I.G.E.A.

This Italian Secondary School Diploma gave me great knowledge about economy and finance

## SELECTED TRAINING ACTIVITIES

[ 02/2025 ]

### Safety course for the use of Lasers and Artificial Optical Radiation, Law 81/08, D.L. 363 and Norma CEI 60825-1

University of Milan

Operating protocols and safety regulations relating to the usage of laser sources, at the University of Milan (MI)

[ 05/2024 ]

### Health and safety in workplaces, ATECO sector 207-M72, risk type B

Training as a collaborator for the Centro Nazionale delle Ricerche (CNR) - 4 hours

- [ 03/2024 – 10/2024 ] **XIV course for glaciological operator "Alfredo Bini"**  
University Milano - Bicocca  
**Link:** <https://www.servizioglaciologicolombardo.it/xiv-corso-per-operatori-glaciologici-alfredo-bini/>
- [ 21/11/2023 ] **Workshop "Divulgazione e Public Speaking"**  
University Milano - Bicocca  
<https://www.unimib.it/servizi/studenti-e-laureati/bicocca-orienta/percorsi-pnrr-orientamento-nella-transizione-scuola-universita>
- [ 18/09/2023 – 18/10/2023 ] **Percorso formativo a.a. 2023-2024 per docenti di corsi PNRR orientamento MUR (D.M 934)**  
Safety course organised by RTI Sintesi in collaboration with OPRAS and provided by Projit - 8 hours
- [ 25/07/2023 ] **Specific training for medium-risk workers**  
Selected arguments: electrical risks, Artificial Optocal Radiation (ROA), ionizing radiations, laboratory instruments, manual handling of loads, safety signs, chemical risk, biological risk, Electromagnetic fields (CEM), fire risk, emergency management, DPI and DPC - 6 hours
- [ 08/11/2022 ] **Safety course for good health and safety practices to work in a laboratory**  
University Milano - Bicocca  
<https://sites.google.com/unimib.it/provenance/hm-school>
- [ 03/07/2022 – 06/07/2022 ] **3rd School of Heavy Mineral Analysis**  
Associazione Italiana Studenti di Fisica (AISF)  
<https://ai-sf.it/>
- [ 22/04/2022 – 06/05/2022 ] **Introduction to Python**  
University Milano - Bicocca  
<https://www.unimib.it/between/languages>
- [ 11/04/2022 – 20/05/2022 ] **Bbetween Comunicare Languages, English B2**  
University Milano - Bicocca  
Safety course attended for the Nuclear and Subnuclear Measurements Laboratory - 1 hour
- [ 2020 ] **Safety course about Radioactivity and Radioprotection**  
Rome (Italy)  
<https://www.pnra.aq.it/workshop-pnra-una-visione-del-futuro-verso-una-programmazione-pluriennale-del-pnra>
- [ 05/12/2023 – 06/12/2023 ] **Workshop PNRA, "A vision of the future: towards multi-year planning of the PNRA"**

## PUBLICATIONS

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- [ 2025 ] **High resolution hyperspectral, microphysical and mineralogical interdisciplinary approach for ice cores and entrapped impurities characterization**  
**Reference:** Deborah Fiorini, Barbara Delmonte, Biagio Di Mauro, Sergio Andò, Susan Kaspari, Alessandro Cavallo, Clara Mangili, Elena Di Stefano, Claudio Artoni, Guido Pastore, Valter Maggi  
Submitted paper as first author, about the analysis of ice core using a hyperspectral system, microphysical analyses, XRD, Raman spectroscopy and a Hyperspectral Imaging Microscope Spectrometer (HIMS)
- [ 2024 ] **Temporal markers in a temperate ice core: insights from 3H and 137Cs profiles from the Adamello Glacier**  
**Reference:** E. Di Stefano, G. Baccolo, M. Clemenza, B. Delmonte, D. Fiorini, R. Garzonio, M. Schwik, V. Maggi  
Strong contribution to the 3H and 137Cs measurements and interpretation procedure and the hyperspectral signal's extraction
- [ 2023 ] **High resolution hyperspectral, microphysical and XRD multy-proxy analyses of Adamello glacier ice-core sections focusing on mineral dust layers**  
**Reference:** D. Fiorini, B. Di Mauro, R. Garzonio, R. Colombo, C. Artoni, A. Cavallo, B. Delmonte, V. Maggi  
Long abstract publication - SISC2023: Mission Adaptation! Managing the risk and building resilience

## HONOURS AND AWARDS

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- [ 2024 ] **Official nominator for the VinFuture Prize**  
Invited by the VinFuture Prize commission as an official nominator
- [ 15/12/2023 ] **Award for Glaciology Master's degree thesis (2022/2023) Awarding institution:** Italian Glaciological Committee  
Master's thesis award for the a.a. 2022/2023, for the Particles and Applied Physics degree thesis titled "High resolution hyperspectral and discrete analysis of Adamello glacier ice-core sections"  
**Link:** <https://www.glaciologia.it/en/il-comitato/premio-di-laurea/>

## SCIENTIFIC OUTREACH ACTIVITIES

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- [ 08/11/2024 – 10/11/2024 ] **Focus Live 2024 scientific dissemination activity**  
Scientific dissemination for the EuroCold Lab. (University Milano - Bicocca)  
**Link:** <https://live.focus.it/palineseito/>
- [ 18/04/2024 ] **Donne e STE(A)M, tra passato e futuro**  
Convegno organizzato dal CUG - Comitato unico di garanzia con il supporto di Women&Tech® ETS - Associazione Donne e Tecnologie  
**Link:** <https://www.unimib.it/eventi/donne-e-steam-passato-e-futuro>
- [ 08/02/2024 – 07/04/2024 ] **"Non solo ambiente ma dialoghi di scienza" project**  
ITIS Marie Curie - Piero Sraffa

[ 30/11/2023 ] **Future visions: research, citizenship and sustainable development**

University Milano - Bicocca

<https://www.unimib.it/eventi/visioni-futuro-ricerca-cittadinanza-e-sviluppo-sostenibile>

[ 24/10/2023 – 26/10/2023 ] **Environmental Sustainability Education Fair**

Palazzo Lombardia, Milan

## MEMBERSHIPS AND PRO- JECTS

[ 2021 – 2024 ] **ClimADA research project**

Research project for the paleoclimatic and environmental reconstruction of the Adamello glacier and central Alps

Link: <https://www.climada.eu/>

[ 03/2024 – Current ] **CNR-ISP**

The optical properties of dust in snow and ice to investigate the climate change

[ 2023 – Current ] **OPTICE: Optics for Ice and Snow**

Link: <https://www.optice.org/news/>

[ 08/2023 – Current ] **QRA: Quaternary Research Association**

Link: <https://www.qra.org.uk/>

[ 08/2023 – Current ] **APECS: Association of Polar Early Career Scientists**

Link: <https://www.apecs.is/>

[ 03/2023 – Current ] **Servizio Glaciologico Lombardo (SGL)**

Link: <https://www.servizioglaciologicolombardo.it/>

## TUTORING ACTIVITIES FOR STUDENTS

[ 09/2024 – 03/2025 ] **Bachelor's thesis 1st co-supervisor**

The thesis focused on the production of a continuous Hyperspectral and microphysical records of Adamello glacier's ice-core sections. Another topic focuses about a deep interpretation of statistical errors

[ 07/2023 – 07/2024 ] **Master's thesis 1st co-supervisor**

The thesis focuses on mineral dust and Tephra concentration analyses on firn cores drilled by the MIMIC project from the M. Melbourne area (Antarctica)

[ 14/11/2023 – 25/07/2024 ] **Master's thesis 1st co-supervisor**

The thesis focuses on the microphysical analysis of firn cores drilled by the MIMIC project. The aim is to study the variability of fine mineral dust and Tephra residues in the M. Melbourne area (Antarctica)

[ 14/02/2023 – 17/02/2023 ] **Orientation and teaching activities for high school students**

Teaching activities were carried out in the EuroCold Laboratory, taking into consideration research fields such as radioactive analyses, hyperspectral scanning methods and all ice cores proxies integrations

[ 26/10/2022 – 23/10/2023 ] **Master's thesis 1st co-supervisor**

The thesis focused on Hyperspectral and discrete analyses of Adamello glacier's ice core sections drilled as part of the ADA270 project, to analyze optical and granulometric properties of ice features and entrapped mineral dust

## CONFERENCES AND SEMINARS

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[ 01/2025 ] **Quaternary Research Association (QRA) Annual Discussion Meeting** Newcastle University (UK)

Oral presentation

**Link:** <https://sites.google.com/view/qraadm2025/home?authuser=0>

[ 10/05/2024 ] **Central Washington University invitation key lecture** Ellensburg (WA)

Seminar titled "High resolution hyperspectral, microphysical and mineralogical analyses on the ADA270 Adamello ice core"

**Link:** <https://www.youtube.com/live/kYEQoXjSezk?si=aRkKc4GSGn49UGid>

[ 14/03/2024 – 15/03/2024 ] **27th Alpine Glaciology Meeting** Grenoble (France)

Oral presentation titled "Hyperspectral, microphysical and mineralogical analyses on the ADA270 ice core"

[ 22/11/2023 – 24/11/2023 ] **SISC2023** Palazzo Lombardia, Milan, Italy

Poster presentation as first author

[ 14/07/2023 – 20/07/2023 ] **INQUARoma 2023** Rome, Italy

Poster presentation as first author and two posters presentations as co-author

[ 21/08/2022 – 26/08/2022 ] **Cryosphere 2022** Reykjavik, Iceland

Two posters presentations as co-author

[ 25/03/2022 – 31/03/2022 ] **Artic Science Summit Week - ASSW2022** Norwegian Polar Institute, Tromsø, Norway

## LANGUAGE SKILLS

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**Mother tongue(s):** Italian

**Other language(s):**

**English**

**LISTENING** B2 **READING** C2 **WRITING** C1

**SPOKEN PRODUCTION** B2 **SPOKEN INTERACTION** B2

**French**

**LISTENING** B1 **READING** B1 **WRITING** B1

**SPOKEN PRODUCTION** B1 **SPOKEN INTERACTION** B1

*Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user*

## SKILLS

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Stata Statistical Software | Matlab/Simulink | Simulation of particle detector with Garfield++ | C C++ C Programming | ROOT: Data Analysis Framework | Montecarlo Simulations | Monte Carlo simulations with Geant4 | Programming languages (Python and R program) | Programming: Phyton, Matlab | Office suite (Microsoft office, Libre office, Open office) | Application Software | Presentation Software | Advanced user in word processors, spreadsheets, creating presentations and managing databases | Statistical Analytics | Graphics and Multimedia | Microsoft Office package: Microsoft Word, Excel, PowerPoint, Access

## NON-TECHNICAL SKILLS

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### Situational and self awareness

High ability to perceive, understand, analyse and predict hazards and risks in complex and dynamic environments for a safety work

### Teamwork

Great teamwork abilities suitable for multicultural environments and challenging situations

### Public speaking

Excellent public speaking abilities learned making cultural fairs activities, schools seminars, conferences oral presentations and further public speaking engagements

### Laboratory experties

Excellent skills working on experimental procedures and great abilities to deal with instrumentations, electronic chains and radioactive sources.

### Physical and mathematics foundation

Strong foundation analitical logical reasoning for physical and mathematical inferations

### Field work

Great ability for environmental sampling on glaciers and montain regions

## VOLUNTEERING

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[ 09/2023 – 12/2023 ]

### Scientific Committee on Antarctic Research (SCAR)

Team work translations for the SCAR EDI (Equality, Diversity and Inclusion) to create more accessible communication chains

## DRIVING LICENCE

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|--------------------|----|
| <b>Motorbikes:</b> | AM |
| <b>Cars:</b>       | B  |

## SPORTS PRACTICED

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[ 2023 – 2025 ]

**Bouldering indoor**

[ 2011 – 2015 ]

**Figure skating on ice**

[ 2012 – Current ]

**Trekking**

[ 2000 – Current ]

**Snowshoeing in the mountains**

### **Environmental and population protection from radiations**

I passed a test during my university carrier, also acquiring skills in the field of dosimetry, to be able to handle with radioactive sources. Furthermore, my Bachelor degree thesis focused on the study of quality of ultra-superficial alpha sources from short- medium half-life radioactive chains. This gave me strong expertises about radiation detectors, laboratory instruments and electronic chains. In the Master's degree, i passed different courses in radiation detectors, radioactivity and Montecarlo Simulation of Radiation Detectors

### **Glaciology and environmental sciences**

I cultivate this hobby by acquiring notions through seminars, scientific reports, books and documentaries. My master's degree thesis experiment is focused on the development of a continuous analysis system (continuous flow analysis) for the study of geometrical and optical properties of the insoluble mineral dust in ice cores and snow

### **Geology and energy**

I am sensitive to environmental issues related to global warming and the usage of sustainable energies. Therefore, in addition to reading reports, I followed university courses about geothermal energy, solar energy and other sustainable energies

### **Astronomy, astrophysics and astrobiology**

I'm very interesting about these fields and keep myself informed reading papers and books and watching documentaries, conferences and seminars

### **Paleontology**

It is a hobby that I have been pursuing for years, following seminars and scientific websites even going to fossiliferous places in person

### **Archeology**

I keep myself informed about the latest findings through time reading scientific reports and following many seminars, considering various historical contexts

### **Reading**

The main activity in my spare time is reading all the readable about all the science fields

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*I authorize the processing of my personal data pursuant to Legislative Decree 196 of June 30th 2003*

Milan, 04/07/2025

