

Antonella Fioravanti

Date of birth: 16th of July 1983

Languages: Italian (native), English (proficient), French (proficient), Dutch (beginner)

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CAREER BREAK September 2018- February 2019

Maternity leave, 6 months.

• EDUCATION

2011-2014 **PhD in Molecular and cellular aspects of Biology**; PhD school, University of Lille-CNRS, France. *"Epigenetic mechanisms and post-translational modifications play a key role in the cell cycle regulation of Alphaproteobacteria"*. Final grade: Tres honorable with the compliments of the Jury.

2010-2008 **Master Degree in Medical Biotechnology**; *Major in gene therapy*. University of Florence, Italy. Final Grade: 110/110 summa cum laude and compliments of the Jury.

2002-2008 **Bachelor Degree in Medical and Diagnostic Biotechnology**; University of Florence, Italy. Final grade 102/110.

• RESEARCH ACTIVITIES

2021 - 2024 **Research Professor** at VUB, department of Science and Bioengineering, Brussel, Belgium

2014 -2023 **Senior research scientist leading the S-layer research project** SMM, VUB -VIB, Brussels Belgium. (2017-2019 **Visiting Scientist** at IRC-VIB Ghent, Belgium; 2020-present **FWO senior scientist fellow**)

2011 – 2014 **PhD student** at the LCBSTB, CNRS of Lille, France.

2010 – 2011 **Ingénieur en biologie** at the LBBSI Laboratoire de Biologie Structurale Intégrative headed by Dr. Vincent Villeret (CNRS Lille), France

2008-summer **Research assistant** for the Construction of a cryogenic Sinorhizobium meliloti collection. Laboratory of Professor Marco Bazzicalupo, Biology Department, University of Florence, Italy.

• TRAININGS

Communication, leadership, management, and personal effectiveness trainings:

2023 Negotiate with success, by Negoservice, (Bruxelles, BE)

2022 Adaptive Leadership, by Grow to excel (Bruxelles, BE)

2021 Intro to Medical Writing, by Dr. Wendy Kingdom and Kathryn White (Leuven, BE)

2018 Science Figured Out, by The Floors is yours (Leuven, BE)

2017 Self-leadership for women scientists, VIB training (Leuven, BE)

Effective Oral Presentations, by Jean-luc Doumont (Ghent, BE)

Scientific training:

2018 Single Molecule Approaches in Imaging, VIB training (Ghent, BE)

2017 Course in Good Manufacturing Practice and the link with Good Laboratory Practice and Good Clinical Practice; European Centre for clinical research training (Leuven, Belgium).
Research Ethics, VIB training (Leuven, Belgium)

Therapeutic Proteins: Design and Applications, VIB training (Ghent, Belgium).

2016 Training sessions for user of the Macromolecular Crystallography (MX) beamlines, Diamond Light Source synchrotron, Harwell Science and Innovation Campus in Oxfordshire (Harwell, UK).

2014 BL3 user training at the Laboratory of Professor Xavier de Bolle, Université de Namur, (Namur, Belgium).

General Microscopy training & Confocal Microscopy training IRI-CNRS (Lille, France).

2012 EMBO Practical Course on Protein Expression, Purification and Characterization (PEPC8) at EMBL (Hamburg, Germany).

2005 Genomic Course Genolab, organized by Tuscany region at the University of Florence, (Florence, Italy).

SELECTED OR INVITED SPEAKER FOR ORAL PRESENTATION:

2023 NANOBODIES4INSTRUCT workshop 2023, (8-17 Jan 2023) Brussels (BE).

2022 GRC Bacterial Cell envelope 2022, (25 June-1 July) West Dover (USA); ASM Microbe 2022 (9-13 June), Washington (USA); Giornata della ricerca italiana in Belgio (April 2022), Brussels (BE); BACT 2022, (April 2022), Paris (FR); BSM Symposium 2022 (11 March), Brussels (BE); Department Seminar Life Sciences Institute (21 January), Vancouver (Canada)

2021 VIB 25th anniversary International conference, (13th of October), Brussels (BE); Department Seminar Pasteur Institut (8th October), Paris (FR); Department Department of Microbial Pathogenesis, (22nd of September), University of Maryland, Baltimore (USA); 16th edition of the D.Day (April 29th), Lausanne, Switzerland; Bacillus ACT 2021, (April 26-28) online conference

2020 Subtillery 2020, June 8-12 online conference

2019 NVK Structural Biology Symposium, June 6, Eindhoven (NL); 20th Conference on Bacilli and Gram-Positive Bacteria, July 23-26, Washington DC (USA); The Biology of Anthrax conference, Sept 3-6, Bari (IT); VIB-UGent IRC, institute seminar, October 4, UGent (BE); Friedrich-Loeffler-Institut, institute Seminar, November 20, FLI Jena (DE); Pediatric Hospital Mayer, Invited Seminar, December 19, Firenze (IT)

2018 Cortona Procarioni meeting, May 17-19, Cortona (IT); Meeting of French Biophysics Society, Nov, Marseille (FR); DBB department seminary, December 13, University of Pavia (IT); VIB seminar 2018, April, Veldhoven (NL); IMM and AFM department seminar, July 20, CNRS - Marseille (FR)

2017 BACT 2017 (International conference on Bacillus anthracis, cereus and thuringiensis), October 1-5, Victoria (CA).

TEACHING ACTIVITIES AND SUPERVISION AND MENTORING OF STUDENTS

2022 **Organizer and tutor** of the Integrated Practical Structure and Function of Proteins for Bioengineering Master I students at VUB, Belgium.

2015 –present **Co-Supervisor** of 1 Postdoc (ongoing), 2 PhD student (successfully completed), **Co-Promoter** of 7 Master students from VUB or Erasmus programs (6 successfully completed, 1 ongoing) and 3 bachelor students (successfully completed).

2021 **Invited Lecturer** for the Master Chemistry and Life Sciences course of “Analytical strategies in Structural Biology”; University of Lille, France.

2019-present **Invited Lecturer** for the International Master in Molecular Microbiology (MMM-University of Namur, Marseille and Marburg) course of “Bacterial Pathogens, Symbionts and Communities” and the Master in Molecular and Cellular Biology and Biochemistry course of “Structure and function of proteins”; University of Namur, Belgium.

Invited Lecturer for the Master in Microbiology course of “Capita Selecta in Microbiology” VUB, Brussels, Belgium.

2014 – present **Organizer and Lecturer** of the Cellular Microbiology course for the Bioengineering Master II students at VUB, Belgium

2014-2015 **Organizer and tutor** of the biochemistry and structural biology Practical Course, for Bioengineering Master I students at VUB, Belgium.

2011-2014 **Supervisor** of 2 Bachelor students and 1 Master student; Faculty of Science, University of Lille, France

• INSTITUTIONAL RESPONSIBILITIES

2022 Quentin Vanderauwera, Master thesis Jury member, VUB (BE)

David Sybers, PhD Jury Member, VUB (BE)

2021-present Scientific consultant and adviser in the STEM field for the Italian Embassy in Belgium (Ambassador Genuardi)

2021 Maté Kiss PhD Jury Member, VUB (BE)

Mahboubeh Ghaemi Master thesis Jury Member, VUB, KU Leuven and Uantwerpen (BE)

Anitha Ravi thesis Jury Member, VUB, KU Leuven and Uantwerpen (BE)

2020 Margot van Nerom, Master thesis Jury member, VUB (BE)

2020-present Founder and active member of the AIRI Belgian chapter (International association of Italian researcher)

2019-2022 Cecile Boutonnet Graduate Student Advisor Committee, University of Avignon, INRA (FR)

2019 Munstasir Ali PhD Jury Member, VUB (BE)

- 2019 –present Postdoc VUB Ambassador (BE)
- 2016 – 2020 Elected Representative for the SBRC Postdocs at VUB-VIB and active member of the Interuniversity Postdocs Committee VIB (BE)
- 2012 – 2014 Elected Representative of PhD students and Postdocs for IRI-CNRS Institute (Lille, FR)
Organizer of monthly seminars and Journal Clubs for PhD students and Postdocs at IRI-CNRS Institute (Lille, FR)

- **FUNDED GRANTS AS CO-PI**

Proof of Principle grant (50.000 €), Funded by VIB entitled “Compounds to inhibit bacterial S-Layer protein assembly”, 2018-2019

Senior research project fundamental research (366.296 €), Funded by FWO entitled “Structural and functional studies of S-layers in pathogenic bacilli”, 2020-2023

Cofinancing OZR FWO Hercules MZW: SPECY-SORT: SPECTral flow CYtometer and cell SORTer (307,626.00 €); 2022-2025

- **EU Grant as independent PI**

ERC StG 2020 Scored with a B at step 2 of evaluation

ERC StG 2023 Ongoing selection

- **ORGANISATION OF NATIONAL MEETINGS**

2022 Organizer of the Brussels’ Microbiology Club, Brussels (BE)

2018 Organizer of the international VIB conference “Postdoc Day: Find the right balance”; Antwerp (BE).

2017 Organizer of the international VIB conference “Postdoc Day: The transience of being a postdoc. What’s next?”; Leuven (Be).

2016 Organizer of the international VIB conference “Postdoc Day: Shape your future”; Brussels

MAJOR COLLABORATIONS

Independent collaboration since 2012 assisting the Mayer Neurology Pediatric Unit in structurally evaluating novel pathogenic mutations identified in patients having RARE metabolic diseases:

Prof. Amelia Morrone, Pediatric Neurology Unit and Laboratories, Neuroscience Department, Meyer Children's Hospital, Florence, IT. (Ferri et al., 2013 Clin. Genet.; Cavicchi et al., 2018 Int J Mol Sci; Ferri et al., 2018 Clin. Chim. Acta; Vignoli et al., Clin. Immu.; Caciotti et al., 2019 Mol. Gen. and Met.)

Independent collaboration since 2020 assisting the department of Clinic and Experimental Medicine in evaluating the novel pathological role of exosomes produced by cancer cells or in infection conditions:

Dr. Enrico Iaccino, Immunology unit, Clinic and Experimental medicine, University of Catanzaro, IT.

(Maisano et al. 2020 Pharmaceuticals; Mimmi et al. 2023 Clinical chemistry and laboratory medicine)

Starting and Ongoing Collaboration on my Independent research on host-pathogen interaction and bacterial cell envelope characterization

Prof. Yves Dufrêne (University of Louvain, BE), Prof. Waldemar Vollmer (University of Newcastle, UK), Dr. Janani Ravi (Michigan State University, USA), Dr. Tomaso Herbert (Friedrich-Loeffler-Institut, Jena, DE), Dr. Gregor Grass (Bundeswehr Institute of Microbiology, Munich, DE), Prof. Damya Laoui (VUB-VIB, BE), Dr. Silke Klee and Dr. Susann Dupke (Robert Koch Institut, Berlin, DE), Dr. Simonetta Gribaldo (Pasteur Institute, Paris, FR), Dr. Jean-Nicolas Tournier (Institut de Recherche Biomédicale des Armées (IRBA), Paris, France), Dr. Bassam Hallis (Interim Deputy Director Research and Evaluation at UK Health Security Agency, Porton Down, UK); Prof. Matteo Brilli (University of Milan, IT), Prof. Janani Ravi (University of Colorado, Aurora, USA), Prof. Enrico Iaccino (Università di Catanzaro, IT) .

RESEARCH OUTPUT: The complete research production can be found at <https://orcid.org/0000-0002-4065-0839>; Two representative recent peer reviewed research papers and reviews:

- **Fioravanti A.**, Mathelie-Guinlet M., Dufrene Y., Remaut H. “The Bacillus anthracis S-layer is an exoskeleton-like structure that imparts mechanical and osmotic stabilization to the cell wall, PNAS Nexus, Volume 1, Issue 4, September 2022, pgac121, <https://doi.org/10.1093/pnasnexus/pgac121>.
- **Fioravanti A.***, Van Hauwermeiren F., Van der Verren S., Jonckheere W., Goncalves A., Pardon E., Steyaert J., De Greve H., Lamkanfi M. and Remaut H.*. Structure of S-layer protein Sap reveals a

mechanism for therapeutic intervention in anthrax. Nat Microbiol. 2019 Nov;4(11):1805-1814.

*Corresponding author.

- Ravi J, **Fioravanti A***. S-layers: The Proteinaceous Multifunctional Armors of Gram-Positive Pathogens. Front Microbiol. 2021 Apr 6;12:663468. doi: 10.3389/fmicb.2021.663468. PMID: 33889148; PMCID: PMC8056022.
- Chateau A., Van der Verren SE, Remaut H., **Fioravanti A.***. The Bacillus anthracis Cell Envelope : Composition, Physiological Role, and Clinical Relevance. Microorganisms, Vol. 8, No. 12, 1864, 12.2020, p. 1-25.

*Corresponding author.

Patent application: International patent application, [WO2019068677A1](#); USA patent, [US11377484B2](#); European Patent [EP3691684](#)

Title: Compounds to inhibit bacterial S-layer protein assembly; Inventors: **Antonella Fioravanti** and Han Remaut; Applicants: VIB and VUB

SCIENCE OUTREACH

- 2023** Part of the documentary “**Nanobodies**” realized by outreach TV channel ARTE tv on air on June 2023
- 2022** Finalist for the **WATS award 2022** by Innoviris as Science ambassadress of Brussels. Part of the documentary “**Anthrax**” realized by outreach TV program “**De kennis van nu**” (<https://www.dekennisvannu.nl/>) streamend on NTR TV (<https://www.ntr.nl/>)
- 2021** **Invited speaker** at the “Global Vaccines” event organized by the Bassetti Foundation, (May 7th) https://www.fondazionebassetti.org/it/focus/2021/05/vaccini_globali.html
>30 lay press communications and articles about science and research, women in science, vaccines, infective diseases on national and international blogs, radio, news papers and magazines (some examples: De Lab: <https://delab.it/intervista-ad-antonella-fioravanti-microbiologa-premiata-dall-accademia-reale-delle-scienze-belga/> ; radio capital: https://www.capital.it/programmi/le-mattine-di-radio-capital-pt-1/podcast/podcast-del-09-02-2021-3/?fbclid=IwAR1CTTh1AljschguzBqqoVbX4FLJGnUqpldY2CpmscpDS581k80Po_2WEk)
- 2020** The Sound of Science festival organised by EOS journal in collaboration with The Belgian Jonge academy (<http://soundofscience.be/>)
Campaign as finalist of the EOS pipet award 2020 as most promising scientist of the year <https://www.eoswetenschap.eu/gezondheid/een-silver-bullet-tegen-anthrax>
- 2019** “How the Postdoc became a Bug Slayer and find a new way to fight Anthrax” Behind the Paper by Antonella Fioravanti, Nature Microbiology Community <https://naturemicrobiologycommunity.nature.com/users/265448-antonella-fioravanti/posts/51207-how-the-postdoc-became-a-bug-slayer-and-found-a-new-way-to-fight-anthrax> **>30 lay press communications** and about the S-layer work and medical microbiology on national and international TV (VRTbe, TV Prato Italy), lay Press (Knack https://www.knack.be/nieuws/wetenschap/moleculair-biologe-antonella-fioravanti-noord-korea-experimenteert-nog-altijd-met-anthrax/article-longread-1619901.html?cookie_check=1649162216 , EOS journal <https://www.eoswetenschap.eu/natuurwetenschappen/de-wereld-redden-van-anthrax-met-een-lama> , Il sole 24, Huffupost, Elle, Business insider, Corriere della sera, La Stampa, Il sole 24 ore, La Nazione, Il Tirreno, Toscana Oggi, Notiziescientifiche.it, labiotech.eu, etc), blogs (Wtscp, She did it, etc.. <https://www.wtnschp.be/english/meet-antonella-dreamer-mom-and-top-scientist/> , <https://www.wtnschp.be/english/saving-the-world-from-anthrax-with-a-llama/>) and radio (Rai Radio2 “Miracolo Italiano”, Radio 3 scienza)
- 2008-2010** Coordinator and Lecturer of the course “On the crime scene-DNA Fingerprinting” in the context of the Openlab initiative as introduction to science for High school students. University of Florence, Italy. (<http://www.openlab.unifi.it/vp-184-biologia.html>)

Activities promoting women equality in STEM and women in leadership

Societal engagement:

2022-2025 Appointed as Member representing Women in science in the **Bilateral Belgian-Italian Advisory Board on Gender Equality and Women empowerment** organized by the Italian Embassy in Belgium in collaboration with Belgian Ministry of Foreign Affairs. https://ambbruxelles.esteri.it/ambasciata_bruxelles/en/ambasciata/news/dall_ambasciat_a/2022/02/bruxelles-15-febbraio-2022.html
<https://indiplomacy.it/en/sereni-italy-belgium-panel-womens-rights/>
Member of the Working table organised by the Italian Embassy in Belgium on Italy's Special Envoy for the Human Rights of LGBTQI+ people, Minister plenipotentiary Fabrizio Petri, on the occasion of his mission to Brussels together with LGBTQI+ Belgian association and the Belgian Secretary of State Sarah Schlitz, (march 2022)

Invited speaker:

2022: Invited speaker at International Women's day- Breaking the bias event organised by Pfizer (10 march), online event streamed worldwide. **Invited speaker at Women in STEM event** organised by the University of Namur (11 february), Namur, (BE). **Invited speaker and organiser at Webinar "Women in STEM – Experiences from Italy and Belgium: a Road Map for Future"** hosted by the Italian Embassy in Belgium (11 february) Brussels, (BE)

2021: Invited speaker "Science inspiring Woman" seminars cycle organized by The STEM Factor association, (March 11th) (https://www.instagram.com/p/CMM0wNYFVZb/?utm_medium=copy_link)

Interview by radio capital at the "le mattine di radio capital" program on a special episode on women in STEM : https://www.capital.it/programmi/le-mattine-di-radio-capital-pt-1/podcast/podcast-del-09-02-2021-3/?fbclid=IwAR1CTTh1AljschguzBqqoVbX4FLJgGnUqpldY2CpmscpDS581k80Po_2WEk)

HONORS

2023 Knight of the Italian Republic by the order of Stella d'Italia.

The "Stella d'Italia" honor was given to me by the Italian President of the Republic Sergio Mattarella, my candidacy was proposed by the Italian ministry of foreign affairs and accepted by the Order of the Stella. I was given this honor because of my contribution in science, my commitment to support women in science and promote women empowerment, my dedication for science outreach and my activities to support and promote cooperation between Italy and Belgium.

FELLOWSHIPS AND AWARDS

2022 Finalist for the Innoviris WOMEN in STEM award 2022 (WATS 2022)

Travel grant by FWO, to attend to "Gordon Research conference" June 2022, USA.

2020 Winner of the EOS Pipet AWARD 2020 as the most promising young scientist of the year awarded by the EOS Journal and the Belgian Jonge Academie

Winner of the "Premio Cerreto 2020" awarded by the city of Prato to its most outstanding citizen, who have distinguished her/himself for her/his contribution in science, art or business.

Listed among the "40 most promising under 40 of the year" by the journal Fortune (<https://www.fortuneita.com/2020/07/06/40-under-40-ecco-i-ricercatori-italiani-del-2020/>)

Listed among the "100 women of the year 2020" by the journal F (<https://www.cairoeditore.it/f/f-n-01-05-gennaio-2021/67338>)

Best presentation Award, international online conference Subtillery 2020

Senior Postdoctoral fellowship 2020-2023 (project number: 1253121N) awarded by Flemish Research Foundation (FWO, Belgium)

2019 Travel grant by Flemish Research Foundation (FWO, Belgium) to attend the International Conference on Bacilli and Gram-Positive Bacteria, Washington D.C., USA

Best Poster presentation Award at the international conference on Cell Biology of Prokaryotes, Badstaffeltein (GE)

2018 Best presentation Award at the VIB seminar 2018, Veldhoven (NL)

2017 Best Poster presentation award at the 2017 general meeting of the Belgian Society for Microbiology, Brussels (BE)

Travel grant by FWO to attend to BACT 2017 (International conference on Bacillus anthracis, cereus and thuringiensis), Victoria, British Columbia, Canada

2016 Travel grant by FWO, to attend to "The Biology of Anthrax" conference November 2016, USA.

2011- 2014 PhD grant by Région Nord Pas de Calais, France

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