

Pamela Ferretti

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RESEARCH INTERESTS I work since April 2013 at the Laboratory of Computational Metagenomics (University of Trento, Italy). My research interests are in the field of computational biology, host-microbe interactions and Illumina-MinION hybrid genome assembly. I focused on the analysis of novel relevant pathogen strains of *Pseudomonas aeruginosa*, mainly responsible for pulmonary infections, Klebsiella and Mycobacteria. My current research focuses on vertical microbiome transmission.

CURRENT POSITION **POSTGRADUATE STUDENT AT THE LABORATORY OF COMPUTATIONAL METAGENOMICS**

Centre for Integrative Biology (CIBIO), University of Trento, Italy.

I am focusing on the tracking and the characterization of the mother-infant microbiome transmission, especially through breastfeeding and natural delivery mode.

EDUCATION **SEPTEMBER 2014 – MARCH 2016**

MASTER OF SCIENCE IN CELLULAR AND MOLECULAR BIOTECHNOLOGY

University of Trento, Italy. The entire degree program was in English.

Degree mark: 110 with honours

Thesis: Improving the reconstruction of bacterial genomes and metagenomes by combining short- and long-read sequencing technologies. Advisor: Dr. Nicola Segata

SEPTEMBER 2011 – MARCH 2014

BACHELOR OF SCIENCE IN COMPUTER SCIENCE (Interdisciplinary Program in Biology)

University of Trento, Italy

I was the first student to take part to an innovative degree program that included one year of biology courses from the Bachelor of Science in Biomolecular Sciences and Technology.

Thesis: Empirical evaluation of sequence assemblers and genome reconstruction of novel clinically relevant pathogen strains. Advisor: Dr. Enrico Blanzieri, Co-advisor: Dr. Nicola Segata

2005 – 2010

HIGH SCHOOL DIPLOMA AT “LICEO SCIENTIFICO A. SPALLANZANI”

Reggio nell’Emilia. High School program focused on languages (English and German).
Final work title: Morphology and Evolution of Galaxies.

TEACHING 30TH APRIL 2016

“ II LEVEL MASTER IN IDROLOGY AND THERMAL MEDICINE ”

Lecture on “Introduction to the human microbiome” (Comano Terme, Italy)

2014 – APRIL 2016

PRIVATE TUTOR

Private tutoring activity on C++, Object Oriented C++ programming, Project Management and Network Security.

27TH JUNE 2014

WEBVALLEY 2014

Lecture on “*Microbial genome assembly*” (San Lorenzo in Banale, Italy)
[Slides are available at: <https://webvalley.fbk.eu/program-2014/>]

22TH JUNE 2014 – 12TH JULY 2014

JUNIOR TUTOR AT WEBVALLEY 2014

I was selected as one of the tutors that supported Web Valley 2014 students during genome assembly lab sessions. WebValley is the FBK summer school for dissemination of interdisciplinary research. The project was to design a novel web platform for studying microbiota dysbiosis in childhood (San Lorenzo in Banale, Italy)

2011 – 2012

PRIVATE TUTOR

for High School students (in Biology, Chemistry and Astronomy).

2005 – 2011

VOLUNTEER

At astronomical observatory “Padre Angelo Secchi” of Castelnovo di Sotto (Italy). My job focused on popular science, targeting all ages.

From 2009 to 2011 I was responsible for the joint collaboration with the astronomical observatory “Celado” of Castello Tesino (Italy) and astronomical observatory “Ferdinando Caliumi” of Monte Armidda, Lanusei (Italy).

WORK EXPERIENCE **JANUARY 2015 – MARCH 2016**

MASTER INTERNSHIP

at Laboratory of Computational Metagenomics, Centre for Integrative Biology (CIBIO), University of Trento, Italy. The master thesis was focused on the innovative Nanopore MinION sequencing platform.

APRIL 2013 – APRIL 2014

BACHELOR INTERNSHIP

at Laboratory of Computational Metagenomics, Centre for Integrative Biology (CIBIO), University of Trento, Italy. The master thesis was focused on the reconstruction of novel clinically relevant pathogens (*Pseudomonas aeruginosa*, Mycobacteria and Klebsiella strains), and the evaluation of the available genome assemblers.

APRIL 2014 – MAY 2015

EXPERIENCE IN THE BUREAUCRATIC PROCEDURES FOR THE ETHICAL COMMITTEE APPROVAL

I worked under the supervision of Dr. Nicola Segata in the definition of all documents and research protocols required to achieve Ethical Committee approvals of S. Chiara Hospital for the project aimed to characterize the vertical microbiome transmission from the mother to the newborn and the cystic fibrosis project.

PUBLICATIONS **SEPTEMBER 2016**

“Experimental metagenomics and ribosomal profiling of the human skin microbiome”

Pamela Ferretti, Stefania Farina, Mario Cristofolini, Giampiero Girolomoni, Adrian Tett, Nicola Segata
In press, *Experimental Dermatology*, September (2016)

JUNE 2015

“Exploring vertical transmission of the gut microbiota from mother to child”

Christian Milani, Leonardo Mancabelli, Gabriele Lugli, Sabrina Duranti, Francesca Turroni, Chiara Ferrario, Marta Mangifesta, Alice Viappiani, **Pamela Ferretti**, Valentina Gorfer, Adrian Tett, Nicola Segata, Douwe van Sinderen, and Marco Ventura
Published on *Applied and Environmental Microbiology (AEM)*, July (2015)

FEBRUARY 2015

“Characterization of 17 strains belonging to the *Mycobacterium simiae* complex and description of *Mycobacterium paraense* sp. nov.”

Ana Roberta Fusco da Costa, Tarcisio Fedrizzi, Maria Luiza Lopes, Monica Pecorari, Wanda Lailan Oliveira da Costa, Elisabetta Giacobazzi, Jeann Ricardo da Costa Bahia, Veronica De Sanctis, Karla Valeria Batista Lima, Roberto Bertorelli, Antonella Grottola, Anna Fabio, Alessandro Mariottini, **Pamela Ferretti**, Francesca di Leva, Giulia Fregni Serpini, Sara Tagliacuzzi, Fabio Rumpianesi, Olivier Jousson, Nicola Segata, and Enrico Tortoli.

Published on *International Journal of Systematic and Evolutionary Microbiology* (2015), 65, 656–662

NOVEMBER 2014

The new phylogenesis of the genus *Mycobacterium*

Enrico Tortoli, Tarcisio Fedrizzi, Monica Pecorari, Elisabetta Giacobazzi, Veronica De Sanctis, Roberto Bertorelli, Antonella Grottola, Anna Fabio, Pamela Ferretti, Francesca Di Leva, Giulia Fregni Serpini, Sara Tagliazucchi, Fabio Rumpianesi, Olivier Jousson, Nicola Segata

Published on *International Journal of Systematic and Evolutionary Microbiology* (2014).

CONFERENCES 24TH SEPTEMBER 2016

“MICROBIOTA NELLA MEDICINA DEL FUTURO”

Accepted with short talk entitled “*Trasmissione del microbiota dalla madre al neonato*” (Comano Terme, Italy)

18TH APRIL 2016

“COMANO INCONTRA LA DERMATOLOGIA TRENTINA”

Accepted with short talk entitled “*Il microbiota della pelle*” (Comano Terme, Italy)

19TH OCTOBER 2015

“THEODOR ESCHERICH SYMPOSIUM 2015”

Accepted with short talk entitled “*Assessment of Illumina-Nanopore hybrid assembly performance for bacterial genomes*”. (Graz, Austria)

3TH OCTOBER 2015

“IL MICROBIOTA: SALUTE, TERME E ALIMENTAZIONE”

Accepted with short talk entitled “*Il microbiota cutaneo nella psoriasi: il progetto alle Terme di Comano*” (Comano Terme, Italy)

5TH - 10TH JUNE 2015

“SYMBIOMES: SYSTEMS BIOLOGY OF HOST-MICROBIOME INTERACTIONS”

Accepted with poster entitled “*Toward optimizing de novo hybrid assembly from short and long reads sequencing for isolate and microbiome samples*” (Pultusk, Poland).

8TH - 11TH SEPTEMBER 2014

“3S BIOLOGY SUMMER SCHOOL”

Four days of lectures oriented to Systems, Synthetic and Semantic Biology: theoretical and hands-on sessions (University of Trento, Italy)

15TH FEBRUARY 2014

“IL MICROBIOTA: INTERAZIONE TRA MICRORGANISMI E CORPO UMANO”

Seminar promoted by CIBIO, APSS and LILT, focused on the interaction between our body and the microbiome, in both healthy and diseased state (Rovereto, Italy).

SCHOLARSHIPS AND AWARDS

MAY 2016

POSTGRADUATE SCHOLARSHIP for the analysis of metagenomic data.

At Information Engineering and Computer Science Department, University of Trento (Italy)

JUNE 2015

TRAVEL GRANT by European Science Foundation for the “Symbiomes: Systems Biology of Host-Microbiome Interactions” conference in Pultusk (Poland).

LANGUAGES

ITALIAN: Native

ENGLISH : Professional working proficiency (and also PET certificate level B1- 2007)

GERMAN: Limited working proficiency (Livello B1, Zertifikat Deutsch Für Jugendliche of Goethe Institut - 2009)

SPANISH: Elementary proficiency

JAPANESE: Elementary proficiency

COMPUTER SKILLS

Experience with **Linux, Windows** and **Mac OS**.

Languages: C++, C, Bash, Python.

Bioinformatics softwares: MetaPhlan2, HUMAnN2, QIIME, LEfSe, Cytoscape and genome assemblers (SOAPDeNovo, MIRA, Velvet, MaSuRCA, SPAdes, Megahit).

COMMUNICATION SKILLS

JANUARY 2014 – TODAY

Lab meeting presentations

13TH MAY 2010, Castello Tesino (TN)

PRESENTER AT THE CONFERENCE OF MARGHERITA HACK

I presented the conference, introducing the guests in front of 400 people.

OTHER RELEVANT SKILLS

TEAM WORKING and **INDEPENDENCE** acquired by research activity

LEADERSHIP, TAKING DECISIONS and **WORKING UNDER STRESSFUL CONDITIONS** acquired by volunteer activity as first responder at Croce Bianca Trento (118 Trentino Emergenza).

ORGANIZATIONAL and MANAGERIAL SKILLS acquired by being at the same time student, researcher and having a part time job.

11TH - 13TH JUNE 2014, University of Trento

INTENSIVE COURSE ON PROJECT MANAGEMENT

The course was focused on project strategy (planning, start-up strategies, close-out, problem solving) and on fund-raising (cost management and communication).

PERSONAL INTERESTS Since February 2014, I am volunteer at “Croce Bianca Trento” (Trentino Emergenza 118) as certified first responder. I am interested in sciences in general (in particular in biology and astronomy), languages and martial arts.

Pamela Ferretti

Trento 04/10/2016