

**PERSONAL INFORMATION**

Family name, First name: Selbmann, Laura

Researcher unique identifier(s): ORCID, 0000-0002-8967-3329; Research ID, L-3056-2013

Date of birth: 02 May 1965

Nationality: Italian

URL for website:

<https://twitter.com/LauraSelbmann>; [https://www.researchgate.net/profile/Laura\\_Selbmann](https://www.researchgate.net/profile/Laura_Selbmann)

<http://www.mna.it/genova-ass/genova-micologia-universit%C3%A0-della-tuscia>

**• EDUCATION**

2018 Physalia course in metagenomics, Berlin, Germany.

2014 Course Medical Mycology, Westerdijk Institute, The Netherlands.

2002 Course of General Mycology, Westerdijk Institute, The Netherlands.

2000 PhD Biological and Biochemical Evolution, University of Tuscia (UNITUS), Italy.

1993 MSc Degree Biology, University of Sapienza, Rome, Italy.

**• CURRENT POSITION(S)**

2015 – present Associate Professor of Botany and Mycology, Department of Ecological and Biological Sciences (DEB), UNITUS.

2009 – present Scientific responsible for the preservation, scientific valorization, divulgation of collections of the Italian Antarctic National Museum (MNA), Mycological Section, Genoa, Italy.

**• PREVIOUS POSITIONS**

2006 – 2015 Senior Researcher on Botany, DEB, UNITUS.

2000 – 2006 Postdoc, biodiversity of Antarctic endolithic communities, DEB, UNITUS.

**• FELLOWSHIPS AND AWARDS**

2010 CAREX Transfer of Knowledge Grants (EU).

2008 Fellowship NL-TAF-4012 funded by SYNTHESYS, Phylogeny of Antarctic endolithic fungi.

2005 Fellowship NL-TAF-775 funded by SYNTHESYS (SYNTHESIS of systematic resources, the European Union-funded Integrated Infrastructure), Phylogeny of Antarctic endolithic fungi.

2004-2012 regular Guest at the Westerdijk Institute (fungal Biodiversity Centre), Utrecht, NL under the direct supervision of Prof. G. Sybren de Hoog.

1998 Stage at the Nestlè Research Centre, Lausanne (CH); scientific results on fungal exopolysaccharides and applications as immunomodulators patented (PCT/EP01/03100 US 2003/0186937).

**• SUPERVISION OF GRADUATE STUDENTS AND POSTDOCTORAL FELLOWS**

2006 – 2019 3 Postdocs (3 females), 8 PhD (7 females), > 35 Master-students, numerous Bachelor students. All these students focused mainly on endolithic communities and molecular phylogeny of organisms therein.

**• TEACHING ACTIVITIES (if applicable)**

2015 – 2020 “General Botany” Course for Bachelor students in Biology, UNITUS.

2012 – 2020 “General Mycology and Phylogeny” Course for MS Degree, UNITUS.

2011 – 2012 “Bioindicators and Mycology” Course for MS Degree, UNITUS.

2006 – 2011 “Systematic Botany and Mycology” Course for MS Degree, UNITUS.

2006 – 2009 “Laboratory for Biological Systems”, Course for MS Degree, UNITUS.

**• ORGANISATION OF SCIENTIFIC MEETINGS (if applicable)**

2020 Organizer of the symposium “Perspectives and Potentialities of the JGI Doe Fungal - Omics Resource”, [European Conference on Fungal Genetics ECFG15](#), 17-20 Feb., Rome, Italy, planning the scientific program, speakers invitation, abstract submission (> 700 attendees).

2016 Organizer of the [6th International conference of the ISHAM](#) working group on Black Yeasts, 15-17 Sept., VT, for the first time held Italy; delegate communication, website design, finances and abstract submissions.

2013 Chair, 5th ISHAM International conference of the ISHAM working group on Black Yeasts, 29 Nov.-1st Dec. Guangzhou, China.

2011 Chair 15th International Biodeterioration Biodegradation Congress, 19-24 Sept, Wien, Austria.

2008 Co-chair and invited speaker, XII IUMS conference (International Unions of Microbiological Societies), 5-9 Aug, Istanbul, Turkey.

**• INSTITUTIONAL RESPONSIBILITIES (if applicable)**

2020 – present Erasmus delegate at DEB, UNITUS

2012 – present Member of the Scientific Committee for the Alpine Studies Centre (TN), UNITUS.

2009 – present Responsible Mycological Section of the MNA, Genoa, Italy.  
2009 – present Member of the scientific committee of the Academic Museum System (SMA), UNITUS.  
2009 – present Member of the academic committee for the course of Biology, UNITUS.  
2008 – present member of the Academic Board of the PhD course in “Ecology and Management of the Biological Resources”, UNITUS.

● **REVIEWING ACTIVITIES (if applicable)**

2020 Guest Editor for the Special Issue “[Ecophysiology of extremophiles: Insights into extraterrestrial environments](#)”, *Environmental Microbiology*.  
2020 Guest Editor for the Special Issue “[Advances in Fungal -Omics](#)”, *Life*.  
2019 Editorial Board for *Astrobiology*  
2018 Editorial Board for *Plant and Fungal Systematics* (<https://www.degruyter.com/view/j/pfs>).  
2018 Guest Editor for the Special Issue “[Fungi from Extreme Environments](#)”, *Life*.  
2018 Editorial Board for *Life* <https://www.mdpi.com/journal/life/editors>.  
2018 Component of the committee for the PhD thesis, Dr L. Perini, University of Ljubljana, Slovenia.  
2017 Reviewer for the National Center of Science and Technology Evaluation (NCSTE), Kazakhstan.  
2017 External reviewer for PhD thesis, Dr. Z. Pieterse at the University of Pretoria, South Africa.  
2016 Reviewer for the National Science Foundation (USA).  
2016 External examiner for a PhD thesis, Dr. A. Stevenson, at the Queen’s University, Belfast, Ireland.  
2015 External reviewer for PhD thesis, Dr X. Vázquez-Campos, The University of New South Wales, Sydney, Australia.  
2012 Editorial Board for *Journal of Mycology*.  
2011 Reviewer for the Chilean Antarctic Institute (INACH), 2011.

Reviewer for several scientific journals: *Studies in Mycology*, *Persoonia*, *International Biodeterioration & Biodegradation*, *Polar Biology*, *Annals of Microbiology*, *Fungal Diversity*, *Acta Astronautica*, *Antarctic Science*, *Astrobiology*, *Mycological Progress*, *Life*, *Nova Hedwigia*, *Origins of Life and Evolution of Biospheres*, *Mycologia*, *BCM Microbiology*, *Biology*, *Fungal Biology*, *Scientific Report*, *Microorganisms*.

● **MEMBERSHIPS OF SCIENTIFIC SOCIETIES (if applicable)**

2019 – present Member of the MIRRI-Italy (Microbial Resource Research Infrastructure).  
2015 – present Secretary of the Italian Mycological Working Group.  
2015 – present Member of the International Society of Human and Animal Mycology (ISHAM).  
2015 – present Member of the European Astrobiology Network Association (EANA).  
2009 – present Responsible for the Mycological section of the Italian Antarctic National Museum (MNA).  
2004 – present Member of the Italian Society of Botany.

● **MAJOR COLLABORATIONS (if applicable)**

The following collaborations, together with my experience in the frame of PNRA projects, laid the foundation for the approval of one small scale and two large scale projects, Community Science Program (CSP) calls, DOE.

- ✓ Sybren de Hoog: phylogenetic studies of endolithic Black Yeasts from Antarctica and other extreme environments, main expert in Black Yeasts and relatives, Westerdijk Institute, NL (since 2001).
- ✓ Jason E. Stajich: genomics and metagenomics of Antarctic cryptoendolithic communities, University of California, Riverside (CA, USA) (since 2015).
- ✓ Anna Gorbushina: Black Yeasts from building materials, Freie Universitat, Germany. (since 2016).
- ✓ Katja Sterflinger: proteomics, metabolomics and stress responses of endolithic Black Yeasts from Antarctica, Boku University, Wien, Austria (since 2008) .
- ✓ Jean Pierre de Vera: survival and resistance of Antarctic endolithic Black Yeasts to space experiments, funded by European Space Agency and Italian Space Agency, German Aerospace Center (DLR), Berlin, Germany (since 2005).
- ✓ Susannah Tringe and Igor Grigoriev: -omics analysis of Antarctic cryptoendolithic communities and microorganisms therein isolated, DOE JGI (CA, USA) (since 2017).
- ✓ Asunción de los Ríos: collaboration in the frame of a project “ROCK-EATERS” funded by the Spanish Ministry of Sciences to study diversity and microbial-mineral interactions in epilithic microbial communities from Polar environments, CSIC, Madrid, Spain (since 2018).
- ✓ Nicola Segata: genome sequencing of about 120 Black Yeasts, mostly from Antarctic endolithic communities, University of Trento, Italy (since 2019).

### Most important publications:

Complete list of publications at <https://scholar.google.it/citations?user=FwefdmkAAAAJ&hl=it&oi=ao>

According to my Google Scholar profile, my >**150 publications** have been cited **4818 times** and my H index is currently **37**. I've published 13 articles with 50 or more citations, 9 with 100+, 1 with 200+, 1 above 400. In 2018, I was Guest Editor of a Special Issue (SI) "Fungi in Extreme Environments" for *Life*; three papers (Spina et al. 2018 <https://www.mdpi.com/2075-1729/8/3/27>; Muggia and Grube 2018 <https://www.mdpi.com/2075-1729/8/2/15> and my lab.'s Coleine et al. 2018 <https://www.mdpi.com/2075-1729/8/2/19>) therein published are among **Top 10 cited paper in last two years** in *Life*. In 2020, I'm currently acting as Guest Editor for one SI for *Life* and one for *Environmental Microbiology*. In the last 10 years, I have authored >70 ISI publications, including an invited review on endolithic fungi (Coleine et al., 2020), most of which as first, senior or corresponding author. Most of these publications appeared in Q1 journals; 5 in journals with Impact Factor (IF) 15 (i.e. *Fungal Diversity* and *Studies in Mycology* that are the highest journal in Mycology field); 6 in the renowned subject journal *Astrobiology* (the highest in this field) with IF 4; 69 in journals in leading peer reviewed journals in my field with IF between 2.7 and 4.9 (e.g. *Frontiers in Microbiology*, *Microorganisms*, *Plos ONE*, *Life*, *Environmental Microbiology*, *Fungal Biology*, *Life*, *IMA fungus*, *Scientific Reports*, *Fungal Ecology*). >15 papers are in preparation or under review. Additionally, I published 1 book chapters, and 2 are *in press*.

### Selected publications:

1. Onofri S, de la Torre R, de Vera J., Ott S, Zucconi L, **Selbmann L.**(corr. author.), ... & Horneck, G. 2012. Survival of rock-colonizing organisms after 1.5 years in outer space. *Astrobiology* 12(5):508-516. *First study demonstrating survival of endolithic fungi in space under prolonged dehydration*.
2. Egidi E, de Hoog GS, Isola D, Onofri S, ... & **Selbmann L** 2014. Phylogeny and taxonomy of meristematic rock-inhabiting black fungi in the dothidemyces based on multi-locus phylogenies *Fungal Diversity* 65:127–165. *Comprehensive molecular phylogenetic study of endolithic fungi worldwide and description of 31 new species and 13 new genera*.
3. **Selbmann L**, Isola D, Egidi E, Zucconi L, ... & Onofri S. 2014. Mountain tips as reservoirs for new rock-fungal entities: *Saxomyces* gen. nov. and four new species from the Alps. *Fungal Diversity* 65(1):167-182. *Endolithic black fungi at high altitudes in the Alps (3200 m asl)*.
4. **Selbmann L**, Zucconi L, Isola D, & Onofri S. 2015. Rock black fungi: excellence in the extremes, from the Antarctic to space. *Current genetics* 61(3):335-345. *Endolithic fungi at the boundary of life in the Antarctic deserts as a model for astrobiological study*.
5. Onofri S, de Vera JP, Zucconi L, **Selbmann L.** (corr. author), ... & Horneck G. 2015. Survival of Antarctic cryptoendolithic fungi in simulated Martian conditions on board the International Space Station. *Astrobiology* 15(12):1052-1059. *Study demonstrating, for the first time, the limits for life for some terrestrial endoliths are beyond Mars conditions. First time Martian conditions. This article was cited in the Research Highlights of Nature (ARRIZABALA, C. (2016))*.
6. Zucconi L, Onofri S, ... & **Selbmann L.** 2016. Mapping the lithic colonization at the boundaries of life in Northern Victoria Land, Antarctica. *Polar Biology* 39(1):91-102. *First comprehensive study demonstrating the geographic limits for endoliths in the ice-free deserts of Antarctica*.
7. **Selbmann L**, Onofri S, Coleine C, Buzzini P, Canini F, Zucconi L 2017. Effect of environmental parameters on biodiversity of the fungal component in the lithic Antarctic communities. *Extremophiles*, 21(6):1069–1080. *First comprehensive study on the effect of increasing environmental pressure on shaping Antarctic endolithic communities structure and composition*.
8. Coleine C, Stajich JE, Zucconi L, ... & **Selbmann L.** 2018. Antarctic cryptoendolithic fungal communities are highly adapted and dominated by Lecanoromycetes and Dothideomycetes. *Frontiers in microbiology* 9:1392. *First wide comparative study of structure and composition of fungal assemblages in Antarctic endolithic communities under different environmental pressure*.
9. Coleine C, Gevi F, Fanelli G, Onofri S, Timperio AM, & **Selbmann L.** (corr. author) 2020. Specific adaptations are selected in opposite sun exposed Antarctic cryptoendolithic communities as revealed by untargeted metabolomics. *Plos one* 15(5):e0233805. *First study ever highlighting metabolic adaptation and responses of Antarctic endolithic communities under increasing stress*.
10. Coleine C, Pombubpa N, Zucconi L, Onofri S, ... & **Selbmann L** (corr. author). 2020. Uncovered Microbial Diversity in Antarctic Cryptoendolithic Communities Sampling three Representative Locations of the Victoria Land. *Microorganisms* 8:942.

### Invited presentations at international conferences/schools:

2020 The 15th European Fungal Genomic Conference, Rome, Italy 17-20 February.

2019 The 3rd International Symposium on Fungal Stress: ISFUS, José dos Campos, Brazil, 20-23 May.

2017 The 2nd International Symposium on Fungal Stress: ISFUS, Goiânia, Brazil, 8-11 May.

- 2017 34th Annual Meeting of the European Culture Collections' Organization, Brno, Czech Republic, 13-15 September
- 2011 4th International Conference on Polar and Alpine Microbiology, Ljubljana, Slovenia 4-8 Sept..
- 2010 CAREX Summer School Pieve Tesino, Italy 14-16 July.

***Scientific Expeditions:***

2018/19 Antarctic Campaign PNRA XXXIV expedition; as PI of the proposal and coordinator of field activity, I spent 4 weeks in the Italian Station “Mario Zucchelli”, to organize and perform endolithic communities sampling in the Victoria Land and download microclimatic data from micromonitoring stations.

2015/16 Antarctic Campaign, PNRA XXXI expedition; as PI of the proposal and coordinator of field activity, in collaboration with Prof. Emslie Steven (University of North Carolina, Wilmington), I spent 3 weeks in the USA Station “McMurdo” for field work in the McMurdo Dry Valleys and 2 weeks in the Italian Station “Mario Zucchelli” for sampling in the Northern Victoria Land. I led the field work that was multi-disciplinary and included endolithic communities sampling, installation of micromonitoring stations.

2010/11 Antarctic Campaign, PNRA XXVI expedition; I spent 10 weeks in the Italian Station “Mario Zucchelli” to organize and perform endolithic communities sampling activities in the Victoria Land as a component of the research unit.

***Contributions to early careers of excellent researchers:***

In all these supervising opportunities, I have been fully involved in the thesis project, development and student mentorship, including seeking opportunities for mobility and training of students. With many of my students and postdocs, I published important research papers in which I routinely assign them as first authors.

A selection of people I mentored who developed highly successful careers:

- PhD student [Daniela Isola](#) was teaching the “Ecology of coastal ecosystems” course, University of Tuscia 2015-2017 and is currently a postdoc at Tor Vergata University.
- PhD student [Eleonora Egidi](#) is currently a postdoc at the Western Sydney University, Australia (Brajesh Singh’s lab).
- MSc student [Donatella Tesei](#) was a Research Fellow for NASA Jet Propulsion Laboratory (JPL, Pasadena, CA, USA) (2018) and is currently postdoc at Boku University, Wien, Austria.
- Co-worker [Laura Barnabei](#) won the EUR G.E.N.E. mentor fellowship and is currently Scientific Project Leader at Université Paris Diderot.
- PhD student [Claudia Coleine](#) is Principal Investigator of the “Metagenomic profiling of Antarctic cRyptendolithic communities preserved in the mycological Section on the Italian Antarctic National Museum, MNA” project funded by the PNRA (2019, 2 years 96.400€) and is currently a postdoc in my lab.
- PhD student [Claudia Pacelli](#) is now employed as a Researcher at Italian Space Agency (agreement n° 33, 31/05/2019).
- MSc student Federica Mostardi is currently the curator of the Culture Collection of the Antarctic National Museum (CCFEE, now renamed MNA-FCC), University of Tuscia, Italy.