

# SARA FONSECA COSTA

## Postdoctoral Researcher

I am a data scientist/bioinformatician at the University of Lausanne.

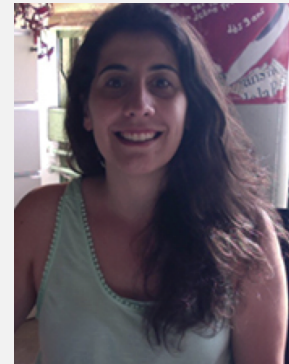
My research interests include aging, circadian clocks, genomics and transcriptomics. I'm working at the moment with single-cell transcriptomics data, in order to integrate this data type in the Bgee database. I use mainly R for data analysis and visualization.

## EDUCATION

- 2013  
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2017
- **University of Fribourg**  
PhD Biochemistry 📍 Fribourg, Switzerland
- Thesis: Model based inference of photoperiod and age related changes in circadian oscillators.
- Advisor & Co-advisors: Prof. Dr. Urs Albrecht, Dr. Jürgen Ripperger and Prof. Dr. Daniel Wegmann
- Jan 2012  
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Out 2012
- **University of Geneva**  
Master thesis 📍 Geneva, Switzerland
- Thesis: Study of an automatization model to analyse genetic diversity in human populations.
- Advisors: Dr. José Nunes (UNIGE) and Prof. Dr. Miguel Rocha (UM)
- 2010  
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2012
- **University of Minho**  
M.S. in Bioinformatics 📍 Braga, Portugal
- 2006  
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2010
- **Polytechnic Institute of Bragança**  
B.S. in Biotechnology Engineering 📍 Bragança, Portugal

## RESEARCH EXPERIENCE

- Jul 2018  
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current
- **Postdoctoral Researcher**  
University of Lausanne 📍 Lausanne, Switzerland
- Data analysis and integration of single cell RNA-Seq data in Bgee database
  - Working in the Bgee pipeline
- Sep 2017  
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Dec 2017
- **Postdoctoral Researcher**  
Walter and Elisa Hall Institute / SIB 📍 Lausanne, Switzerland
- Advisor & Co-advisor: Prof. Dr. Terry Speed (WEHI) and Prof. Dr. Mauro Delorenzi (SIB)
- Data analysis of circadian data



## CONTACT INFO

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🔗 [github.com/SFonsecaCosta](https://github.com/SFonsecaCosta)

ORCID - <https://orcid.org/0000-0001-7794-7997>

☎ +4121 692 4221

For more information, please contact me via email.

## SKILLS

Experienced in molecular biology, biochemistry, genetics and functional genomics.

Experienced in statistical analysis.

Full experience with next generation sequencing data analysis.

Highly skilled in R, Bash, LaTeX

Knowledge of: Python, Perl, C++


*This resume was made with the R package **pagedown**.*

*Last updated on 2020-08-11.*



## PROFESSIONAL EXPERIENCE


2009  
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2011

- **Student researcher**  
University of Porto - Department of Molecular Pathology and Immunology, Hospital Santo Antonio  
Molecular Biology and Bioinformatic (HLA OSAS)  Porto, Portugal  
Advisor: Prof. Dr. Berta Martins




## TEACHING EXPERIENCE

2019

- **Molecular evolution (Bachelor)**  
Teaching assistant  Lausanne, Switzerland

2018  
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2019

- **Molecular genetics methods (Master)**  
Teaching assistant  Lausanne, Switzerland

2018  
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2019

- **Data analysis (Bachelor)**  
Teaching assistant  Lausanne, Switzerland

2013  
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2017

- **TP's Biochemistry**  
Teaching assistant  Fribourg, Switzerland

2014  
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2015

- **Bioinformatics practical Classes**  
Teaching assistant  Fribourg, Switzerland

2013  
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2015

- **Genotyping by Southern Blot Hybridization**  
Teaching assistant  Fribourg, Switzerland



## ORGANISER

2020

- **Gene expression made useful easily: tools and database of Bgee - Practical (<https://github.com/SFonsecaCosta/Bgee>)**  
Organizing team  UNIL, Lausanne, Switzerland

2012

- **Bioinformatics Open Days 2012 (<http://hdl.handle.net/1822/33574>)**  
Organizing Committee  UM, Braga, Portugal



## TRAINING AND COURSES



## PEER REVIEW PUBLICATIONS

2020

- **Single-cell transcriptomics allows novel insights into aging and circadian processes**  
Briefings in Functional Genomics, elaa014  
Sara S Fonseca Costa, Marc Robinson-Rechavi and Jürgen A Ripperger

- 2017 ● **Normalisation against Circadian and Age-Related Disturbances Enables Robust Detection of Gene Expression Changes in Liver of Aged Mice**  
PloS one 12 (1), e0169615  
Sara S Fonseca Costa, Daniel Wegmann, Jürgen A Ripperger
- 2017 ● **Internal normalization of nascent RNA sequencing experiments to identify age-related changes of the mouse liver transcriptome**  
Genomics and Computational Biology 3 (2), e34-e34  
Sara S Fonseca Costa and Jürgen A. Ripperger
- 2016 ● **REV-ERB $\alpha$  influences the stability and nuclear localization of the glucocorticoid receptor**  
Journal of cell science 129 (21), 4143-4154  
Takashi Okabe, Rohit Chavan, Sara S Fonseca Costa, Andrea Brenna, Jürgen A Ripperger, Urs Albrecht
- 2016 ● **Liver-derived ketone bodies are necessary for food anticipation**  
Nature communications 7 (1), 1-10  
Rohit Chavan, Céline Feillet, Sara S Fonseca Costa, James E Delorme, Takashi Okabe, Jürgen A Ripperger, Urs Albrecht
- 2015 ● **Impact of the circadian clock on the aging process**  
Frontiers in neurology 6, 43  
Sara S Fonseca Costa and Jürgen A. Ripperger



## BOOK CHAPTERS

- 2020 ● **Chromatin Immunoprecipitation (ChIP) from Mouse Liver Nuclei**  
Springer US (DOI: 10.1007/978-1-0716-0381-9)  
Sara S. Fonseca Costa and Jürgen A. Ripperger



## PREPRINTS

- 2020 ● **The Bgee suite: integrated curated expression atlas and comparative transcriptomics in animals**  
bioRxiv (doi: <https://doi.org/10.1101/2020.05.28.119560> )  
Frederic B Bastian, Julien Roux, Anne Niknejad, Aurelie Comte, Sara S Fonseca Costa, Tarcisio Mendes De Farias, Sebastien Moretti, Gilles Parmentier, Valentine Rech De Laval, Marta Rosikiewicz, Julien Wollbrett, Amina Echchiki, Walid Gharib, Mar Gonzales-Porta, Yohan Jarosz, Balazs Laurenczy, Philippe Moret, Emilie Person, Patrick Roelli, Komal Sanjeev, Mathieu Seppey, Marc Robinson-Rechavi



## CONFERENCE PRESENTATIONS

2019



**Expression calls from RNA-seq using BgeeCall R package**

Talk + poster presentation, Bioconductor conference - eurobioc2019

📍 UCLouvain, Brussels, Belgium

Sara Fonseca Costa

2016



**Internal normalization of nascent RNA sequencing experiments to identify age-related changes of the mouse liver transcriptome**

Talk presentation, 2nd Challenges in Computational Biology: Gene Expression Data Analysis

📍 Mainz, Germany

Sara S Fonseca Costa



## LANGUAGE



**Portuguese**

Native



**English**

Fluente



**French**

Basic



**Spanish**

Basic