

# Sergio Castillo Lara

Bioinformatician & Data Scientist



## PERSONAL INFORMATION

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Telephone	☎ +34 93 403 13 05	Website	🌐 <a href="https://scastlara.github.io">scastlara.github.io</a>
Date of birth	October 27th, 1992	Github	🐙 <a href="https://github.com/scastlara">github.com/scastlara</a>

## EXPERIENCE

2017 - Present

### Ph.D. Fellow

*Computational Genomics Lab, University of Barcelona*

Supervised by: Josep F. Abril ([jabril@ub.edu](mailto:jabril@ub.edu))

- Development of web-based tools to integrate protein-protein interactions, sequence annotations, and gene expression data for planarians and humans.
- Analysis of RNA-seq, ATAC-seq and ChIP-seq data for *Schmidtea mediterranea*.
- Development of tools that utilize machine-learning for predicting and retrieving protein-protein interactions.
- Assistant teacher of the courses: “Introduction to Algorithmics”: Msc. Bioinformatics for Health Sciences at UPF; “Bioinformatics”: BSc. Biochemistry at UB; “Computational Genomics”: BSc. Bioinformatics at UPF/UPC/UB.

2014 - 2017

### Research Intern

*Computational Genomics Lab, University of Barcelona*

- Prediction of an interactions network of planarian genes and proteins using sequence homology information and machine learning.
- Implementation of a pipeline to retrieve protein-protein interactions from scientific literature using natural language processing.

## EDUCATION

2015 - 2017

### MSc Bioinformatics for health sciences

*Universitat Pompeu Fabra, Barcelona, Spain*

2010 - 2015

### BSc Biology

*Universitat de Barcelona, Barcelona, Spain*

## PROFESSIONAL SKILLS

Programming	<b>Python, Perl, R</b> , JavaScript, Bash
Databases	<b>Neo4j</b> , Cypher Query Language, SQL
Data Science	<b>ggplot2</b> , scikit-learn, R caret
Web	<b>HTML5, CSS, Django</b> , jQuery, Bootstrap, Cytoscape.js
Other	<b>Statistics, Machine-Learning, RNA-seq</b> , Linux, git, LaTeX

## PUBLICATIONS

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R. Arenas-Galnares<sup>†</sup>, **S. Castillo-Lara<sup>†</sup>**, V. Toulis, D. Boloc, R. González-Duarte, G. Marfany, J.F. Abril (2019) <sup>†</sup> *Contributed equally*  
[RPGeNet v2.0: expanding the universe of retinal disease gene interactions network.](#)  
*Database, In Press.*



**S. Castillo-Lara**, E. Pascual-Carreras, J.F. Abril (2019)  
[PlanExp: intuitive integration of complex RNA-seq datasets with planarian omics resources.](#)  
*Bioinformatics, AOP.*



**S. Castillo-Lara**, J.F. Abril (2018)  
[PPaxe: easy extraction of protein occurrence and interactions from the scientific literature.](#)  
*Bioinformatics*, 35(14): pp. 2523-2524.



**S. Castillo-Lara**, J.F. Abril (2017)  
[PlanNET: Homology-based predicted interactome for multiple planarian transcriptomes.](#)  
*Bioinformatics*, 34(6): pp. 1016-1023.



D. Boloc, **S. Castillo-Lara**, G. Marfany, R. González-Duarte, J.F. Abril (2015)  
[Distilling a visual network of retinitis pigmentosa gene-protein interactions to uncover new disease candidates.](#)  
*PLOS ONE*, 10(8): e0135307

## POSTERS

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E. Pascual-Carreras, M. Marín, **S. Castillo-Lara**, P. Coronel-Córdoba, M.S. Magri, J.F. Abril, J.L. Gomez-Skarmeta, E. Saló and T. Adell (2019)  
**ATAC-seq and RNA-seq analysis reveal new elements of planarian posterior organizer.** European Developmental Biology Congress, Alicante.

**S. Castillo-Lara**, J.F. Abril (2018)  
**PPaxe facilitates human-curation of protein-protein interactions filtered from the scientific literature.** VI Jornada de Bioinformàtica i Genòmica, Barcelona.

R. Arenas-Galnares, **S. Castillo-Lara**, V. Toulis, G. Marfany, R. González-Duarte, J.F. Abril (2018)  
**RPGeNet v2.0 Enhanced navigation through the retinitis pigmentosa interaction network**  
VI Jornada de Bioinformàtica i Genòmica, Barcelona.

E. Pascual-Carreras, M. Marín-Barba, **S. Castillo-Lara**, M. Sureda-Gómez, G. Rodríguez-Esteban, H. Heyn, J.F. Abril, E. Saló, T. Adell (2017)  
**Understanding the anterior and the posterior signaling centers in planarians.** XXIX Developmental Biology Meeting, Barcelona.

**S. Castillo-Lara**, J.F. Abril (2017)  
**A human-planarian interologs network to annotate planarian transcriptomes: PlanNET**  
15th International Workshop RECOMB Comparative Genomics, Barcelona.

**S. Castillo-Lara**, D. Boloc, G. Marfany, R. González-Duarte, J.F. Abril (2015)  
**Distilling a network of interactions to uncover genes involved in Retinitis Pigmentosa disease.** II Jornada de Bioinformàtica i Biologia Computacional, Barcelona.

## SCHOLARSHIPS

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2017	Grant for the recruitment of early-stage research staff (FI) <i>Agència de Gestió d'Ajuts Universitaris i de Recerca</i>
2016	Beca de colaboración con departamentos (Collaboration Scholarship) <i>Ministerio de Educación Cultura y Deporte</i>
2014	Summer Research in Genetics <i>University of Barcelona</i>