

# Sergio Castillo Lara

Bioinformatician



## CONTACT

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Date of birth October 27th, 1992  
Nationality Spanish

## EXPERIENCE

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### **Ph.D. Fellow** - Feb. 2017 - Present

*Computational Genomics Lab, University of Barcelona*

- Development of tools to integrate protein-protein interactions, sequence annotations, and gene expression data for the planaria *Schmidtea mediterranea*.
- Analysis of RNA-seq data for *Schmidtea mediterranea*.
- Development of tools that utilize machine-learning for predicting and retrieving protein-protein interactions for model and non-model organisms.
- Assistant teacher of the courses:
  - "Introduction to Algorithmics" in the Msc. Bioinformatics for Health Sciences at UPF.
  - "Bioinformatics" in the BSc. Biochemistry at UB.
  - "Computational Genomics" in the BSc. Bioinformatics at UPF/UPC/UB.

### **Research Intern** - Jun. 2014 – Feb. 2017

*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

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2015 - 2017 **MSc Bioinformatics for health sciences**  
*Universitat Pompeu Fabra, Barcelona, Spain*

2010 - 2015 **BSc Biology**  
*Universitat de Barcelona, Barcelona, Spain*

## PROFESSIONAL SKILLS

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

## LANGUAGES

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Mother tongue Spanish, Catalan  
Foreign languages English – Fluent

## PUBLICATIONS

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**PPaxe: easy extraction of protein occurrence and interactions from the scientific literature**

**Castillo-Lara S.**, Abril J.F. (2018)  
*Bioinformatics*, AOP.

**PlanNET: Homology-based predicted interactome for multiple planarian transcriptomes**

**Castillo-Lara S.**, Abril J.F. (2018)  
*Bioinformatics*, 34(6): pp. 1016-1023

**Distilling a visual network of retinitis pigmentosa gene-protein interactions to uncover new disease candidates**

Boloc D., **Castillo-Lara S.**, Marfany G., González-Duarte R., Abril J.F. (2015)  
*PLOS ONE*, 10(8): e0135307

## POSTERS AND COMMUNICATIONS

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**PPaxe facilitates human-curation of protein-protein interactions filtered from the scientific literature**

VI Jornada de Bioinformàtica i Genòmica (Barcelona, 2018)  
**Castillo-Lara S.**, Abril J.F.

**RPGeNet v2.0 Enhanced navigation through the retinitis pigmentosa interaction network**

VI Jornada de Bioinformàtica i Genòmica (Barcelona, 2018)  
Arenas-Galnares R., Castillo-Lara S., Toulis V., Gonzalez-Duarte R., Marfany G., Abril J.F.

**Understanding the anterior and the posterior signaling centers in planarians**

*XXIX Developmental Biology Meeting* (Barcelona, 2017)  
Pascual-Carreras E., Marín-Barba M., **Castillo-Lara S.**, Sureda-Gómez M., Rodríguez-Esteban G., Heyn H., Abril J.F., Saló E., Adell T.

**A human-planarian interologs network to annotate planarian transcriptomes: PlanNET**

*15th International Workshop RECOMB Comparative Genomics* (Barcelona, 2017)  
**Castillo-Lara S.**, Abril J.F.

**Distilling a network of interactions to uncover genes involved in Retinitis Pigmentosa disease**

*II Jornada de Bioinformàtica i Biologia Computacional* (Barcelona, 2014)  
**Castillo-Lara S.**, Boloc D., Marfany G., González-Duarte R., Abril J.F.

## SCHOLARSHIPS

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