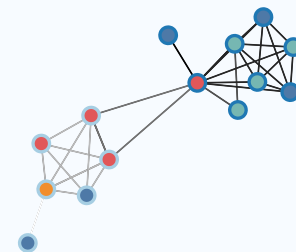


# SERGIO RUIZ-CARMONA

I am currently a Research Officer and Bioinformatician at the [Baker Institute](#), under the supervision of professor [Mike Inouye](#). My research interests are broad and involve the relationship between genetic variants and their effect on protein structures.

I carried out my MSc and PhD in Barcelona in the [Barril Lab](#), where I worked with different structure-based drug design methods with the aim to improve drug design for non-standard targets.



View this resume [online](#)



## SELECTED EDUCATION

2017  
|  
2012

### PhD in Biomedicine

Universitat de Barcelona

Barcelona, ES

- Virtual Screening for novel MoA: Apps. and method developments
- Development and application of **structure-based drug discovery** methods
- Awards: **Extraordinary prize** for PhD Thesis and **Ramon Margalef award** for best publication



## SELECTED POSITIONS

Today  
|  
2019

### Research Officer and Bioinformatician

Inouye Lab

Baker Heart and Diabetes Institute

Melbourne, AUS

- I am working in a project that overlaps Structural Biology and Genomics, trying to understand how rare missense variants alter protein structures and can induce disease

2019  
|  
2017

### Postdoctoral Researcher

Barril Lab, Universitat de Barcelona

Barcelona, ES

- After finishing my PhD, I worked in exciting collaborative projects in the field of epigenetics and cancer, where I carried out multidisciplinary research and learned new experimental skills

2019  
|  
2015

### Associate Professor

Faculty of Pharmacy, Universitat de Barcelona

Barcelona, ES

- Classes in Pharmacy, Food Science and Nutrition degrees (total 400h)

2017

### EMBO Short-Term Fellow

Andreas Bender Lab, University of Cambridge

Cambridge, GB

- I spent 2 months in one of the main Pharmacogenomics groups in the world, where I used **gene-expression profiles** of different biological systems to study BRD4 and drug selectivity



## SKILLS AND TRAINING

### Computational Tools

Drug Discovery (Virtual screening, Molecular dynamics), Machine learning, Data visualization, Statistical analysis, REDCap, Bioinformatics and Data analysis

### Programming

R, Python, Perl, C++, LaTeX, Bash, Java, MySQL, HTML/CSS and Android and Web Development

### Management Skills

2021 EMBO Practical Course: Research to service: Planning and running a bioinformatics core facility; Mental Health and OHS certifications

## CONTACT

✉ [sruizcarmona@gmail.com](mailto:sruizcarmona@gmail.com)

🐦 [@RuizCSergio](#)

🌐 [sruizcarmona](#)

in [Sergio Ruiz](#)

🌐 [ruizsergio.com](#)

## PROGRAMMING

R
Bash
Python
Web Development
SQL

## HIGHLIGHTS

Highly experienced in:

- Computational biology and drug design
- Bioinformatics and biostatistics
- Machine Learning
- Data visualization
- Experimental techniques

Motivated and **collaborative**, recently involved in **Machine Learning**, NGS data analysis, **UK Biobank** and genomics prediction

## MORE INFO

See full CV at [cv.ruizsergio.com](http://cv.ruizsergio.com) for a complete list of positions, publications and more

Reference contact details provided upon request



Source code available in [github](#)  
Last updated in Mar, 2022

## OUTREACH AND OTHER ACTIVITIES

2021  
|  
2020

- **Australasian Leadership Computing Grants**  
Story about NCI Computing Grant
  - Together with Mike Inouye, we were awarded a 1 year computing grant by the Australian National Computational Infrastructure to study COVID-19 proteins and possible drug treatments
- **Shiny App development**  
Related to a project we published in the Journal *Circulation*
- **New tools for new medicines, The Conversation article**  
Lay-summary of some of my work and opinion for The Conversation Spain
- **COVID-19 daily dashboard, until Nov 2020**  
Personal project to showcase COVID-19 evolution in Victoria during major lockdown in 2020

## MAIN SCIENTIFIC OUTPUT

2022

- **The carbon footprint of bioinformatics**  
*Molecular Biology and Evolution*  
Read it [here](#)
  - Jason G Grealey, [...] **Sergio Ruiz-Carmona**, Michael Inouye

2021

- **Oxygen Pathway Limitations in Patients with Chronic Thromboembolic Pulmonary Hypertension**  
*Circulation*  
Read it [here](#)
  - Erin J Howden \*, **Sergio Ruiz-Carmona** \*, [...] Andre La Gerche, Marion Delcroix and Guido Claessen
  - Result of a Bioinformatics Core collaboration. [Shiny app](#) developed

2021

- **Loss of the long non-coding RNA OIP5-AS1 exacerbates heart failure in a sex-specific manner**  
*iScience*  
Read it [here](#)
  - Aowen Zhuang, A Calkin, [...] **Sergio Ruiz-Carmona**, [...] and Brian G Drew
  - Result of a Bioinformatics Core collaboration

2017

- **Dynamic undocking and the quasi-bound state as tools for drug discovery**  
*Nature Chemistry*  
Read it [here](#)
  - **Sergio Ruiz-Carmona**, Peter Schmidtke, [...] Rod Hubbard and Xavier Barril
  - Highlighted in its [issue cover](#)

2014

- **rDock: a fast, versatile and open source program for docking ligands to proteins and nucleic acids**  
*PLoS Computational Biology*  
Read it [here](#)
  - **Sergio Ruiz-Carmona**, Daniel Alvarez-Garcia, [...] Xavier Barril, Rod Hubbard and S David Morley

## EVERYDAY TOOLBOX

- RStudio
- Data viz & Shiny dashboards
- Bash, ssh & GitHub (local or HPC)
- ML optimization (genetic algorithms, MC, ...)
- Linear models & random forests

## WEB

I have also developed [rDock](#) and [Barril Lab](#) websites, used as dissemination platforms where the different tutorials and blog entries are shared with the community



I have been involved in more than 20 collaborative projects in very different fields. I enjoy helping other researchers and collaborators to work in common scientific challenges



My ultimate goal is to help people: from drug discovery to precision medicine and hospital care data analysis