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 mainly 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.

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

2012 | 2010

MSc in Bioinformatics for Health Sciences
Universitat Pompeu Fabra — Barcelona, ES

- Expanding Druggable Genome: PP-Interfaces as a new target class
- Study of novel rational approach to find PP interfacial binders

SELECTED POSITIONS

Today | 2019

Research Officer and Bioinformatician
Inouye Lab
Baker Heart and Diabetes Institute — Melbourne, AU

- I am working in a project that overlaps Structural Biology and Genomics, in collaboration with David Ascher's Lab. Mainly, I am trying to understand how rare missense variants alter protein structures and can induce disease

2019 | 2015

Associate Professor
Faculty of Pharmacy, Universitat de Barcelona — Barcelona, ES

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

2018 | 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

2017

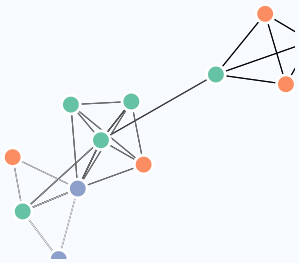
EMBO Short-Term Fellow
Andreas Bender Lab, Unversity of Cambridge — Cambridge, GB

- 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

2016 | 2011

Predoctoral Researcher
Barril Lab, Universitat de Barcelona — Barcelona, ES

- Master's and PhD research projects in the Xavier Barril Lab



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CONTACT

sruizcarmona@gmail.com
@RuizCSergio
sruizcarmona
Sergio Ruiz
ruizsergio.com

PROGRAMMING SKILLS

- R
- Bash
- Python
- Web Development
- SQL

OTHER SKILLS

Highly experienced in:

computational biology and drug design
bioinformatics and biostatistics
data visualization
experimental techniques

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

MORE INFO

See full CV at ruizsergio.com/cv for a complete list of positions, publications and more

Source code available in github
Last updated on Oct 8, 2021

SKILLS AND TRAINING

Computational Techniques

Computer-Aided Drug Discovery (SBDD), Machine Learning, Virtual Screening, Docking, Molecular Dynamics, Chemoinformatics, Quantum Chemistry, Bioinformatics Tools and Analysis

Programming

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

Management Skills

2021 EMBO Practical Course: Research to service: Planning and running a bioinformatics core facility

I have been involved in more than 10 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 patients: from drug discovery to precision medicine and hospital care data analysis

MAIN SCIENTIFIC OUTPUT

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

2021

The carbon footprint of bioinformatics

bioRxiv
Read it here

- Jason G Grealey, […] **Sergio Ruiz Carmona** , Michael Inouye

2017

Dynamic undocking and the quasi-bound state as tools for drug discovery

Nature Chemistry
Read it here

- **Sergio Ruiz-Carmona**, P 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