

Sergio Andreu Sánchez

[Website](#) | [LinkedIn](#) | [GitHub](#) | [Scholar](#)

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PHD STUDENT

I am a fourth-year PhD student in computational biology with a background in molecular biology and genetics. I have a keen interest in understanding the role of the gut microbiome in health and disease. I have experience in different data science projects, working with various omics datasets.

TECHNICAL SKILLS

Languages : Python, R, bash
Data analysis : Univariate statistics, longitudinal data analysis, multivariate statistics, machine learning
Other : Snakemake, Django, Git

EXPERIENCE

PhD candidate January 2020 – January 2024
University Medical Center Groningen Groningen, The Netherlands

- May 2023 – September 2023 Visiting scholar at Computational Metagenomics group
- Large-scale epidemiological analyses using different omics techniques, particularly metagenomics, uncovering the aging of the immune system

Research assistant October 2019 – December 2019
University of Copenhagen Copenhagen, Denmark

- Continue MSc project after graduation. Working with NGS data from the Bird 10,000 Genome project

Part-time bioinformatician Oct 2018 – Sep 2019
Rigshospitalet Copenhagen, Denmark

- Pipeline development for variant calling and different genetic diagnostic tasks
- Clinical microbiology. Tracking of strains.

Part-time bioinformatician Dec 2017 – Nov 2018
Evaxion Copenhagen, Denmark

- Student assistant. Database management. Ad-hoc bioinformatic tasks

EDUCATION

University Medical Center Groningen Groningen, The Netherlands
PhD in Comp. Biology Jan 2020 – Ongoing

University of Copenhagen Copenhagen, Denmark
MSc in Bioinformatics Sep 2017 – Sep 2019

Technical University of Valencia Valencia, Spain
BSc in Biotechnology Sep 2012 – Jan 2017

UNDERGRADUATE PROJECTS

MSc Thesis *Biodiversity Genomics Group. University of Copenhagen. Supervisor: Guojie Zhang*
Mitochondrial quantification from NGS data and data analysis Mitochondria-host co-evolution Evolutionary analysis of insertion

MSc internship *Genomic Medicine. Rigshospitalet. Supervisor: Rasmus Lykke Marvig*
Strain analysis of post-surgical infections and air metagenomes

MSc internship *Center For Protein Research. University of Copenhagen. Supervisor: Søren Brunak*
Genetic determinants of disease comorbidity

BSc internship *Bioengineering Institute. Miguel Hernandez University. Supervisor: Jose Luis Micol-Molina*
Development of software for aiding mapping-by-sequencing

CONGRESSES

- 2022. X Bioinformatics and Genomics Symposium (Valencia). Oral presentation.
- 2022. 9th Congress from the International Human Microbiome Consortium. Poster presentation.
- 2022. 6th Translational Cardiovascular Research Meeting (Utrecht). Oral presentation.
- 2020. Word of Microbiome (online). Poster presentation.
- 2019. Congress European Society for Evolutionary Biology (Turku) . Poster presentation.

PRIZES & HONORS

- 2022. Simonsfonds funding for attendance of IHMC Kobe 2022
- 2021. JXTX Foundation scholarship for attendance of 2021 Cold Spring Harbor's Genome Informatics meeting
- 2016. Technical University of Valencia PROMOE scholarship for international stay in Tsinghua University

SELECTED PUBLICATIONS

- **Andreu-Sánchez, Sergio**, Arno R. Bourgonje, Thomas Vogl, Alexander Kurilshikov, Sigal Leviatan, Angel J. Ruiz Moreno, Shixian Hu et al. "Genetic, environmental and intrinsic determinants of the human antibody epitope repertoire." Provisionally accepted. Immunity
- Bourgonje, Arno R., **Sergio Andreu-Sánchez**, Thomas Vogl, Shixian Hu, Arnau Vich Vila, Ranko Gacesa, Sigal Leviatan et al. "In-depth characterization of the serum antibody epitope repertoire in inflammatory bowel disease using phage-displayed immunoprecipitation sequencing." Provisionally accepted. Immunity
- **Andreu-Sánchez, Sergio**, Lianmin Chen, Daoming Wang, Hannah E. Augustijn, Alexandra Zhernakova, and Jingyuan Fu. "A benchmark of genetic variant calling pipelines using metagenomic short-read sequencing." Frontiers in genetics 12 (2021): 648229.
- **Andreu-Sánchez, Sergio**, Geraldine Aubert, Aida Ripoll-Cladellas, Sandra Henkelman, Daria V. Zhernakova, Trishla Sinha, Alexander Kurilshikov et al. "Genetic, parental and lifestyle factors influence telomere length." Communications biology 5, no. 1 (2022): 565.
- **Andreu-Sánchez, Sergio**, Ahmad, S., Kurilshikov, A., Beekman, M., Ghanbari, M., van Faassen, M., van den Munckhof, I.C., Steur, M., Harms, A., Hankemeier, T. and Ikram, M.A., 2022. TMAO and its precursors in relation to host genetics, gut microbial composition, diet, and clinical outcomes: Meta-analysis of 5 prospective population-based cohorts. medRxiv, pp.2022-09.
- Plachokova, A.S., **Andreu-Sánchez, Sergio**, Noz, M.P., Fu, J. and Riksen, N.P., 2021. Oral microbiome in relation to periodontitis severity and systemic inflammation. International Journal of Molecular Sciences, 22(11), p.5876.
- **Andreu-Sánchez, Sergio**, Wanjun Chen, Josefin Stiller, and Guojie Zhang. "Multiple origins of a frameshift insertion in a mitochondrial gene in birds and turtles." Gigascience 10, no. 1 (2021): giaa161.