Giuliano Netto Flores Cruz

Pharmacist Bioinformatician

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Personal web page

EDUCATION

The University of British Columbia (UBC), *MSc. in Bioinformatics*

SEPT 2021 — AUG 2023 (Vancouver, BC - Canada)
Advisor: Dr. Keegan Korthauer

Federal University of Rio Grande do Sul (UFRGS), *Title of Pharmacist*

FEB 2012 — DEC 2018 (Porto Alegre, RS - Brazil)
Advisors: MSc. Paulo Saraiva & Dr. Alexandre Fuentefria

EXPERIENCE

BC Children's Hospital Research Institute, *Research Assitant*

SEP 2021 — PRESENT (Vancouver, BC - Canada)

- RA at Keegan Korthauer's lab.
- Development of statistical methodology and computational tools for the analysis of high-dimensional genomics data.

BiomeHub, *Bioinformatician*

SEP 2019 — PRESENT (Florianópolis, SC - Brazil)

- Focus on hospital environments and human health.
- Research: development of statistical models to estimate bacterial colony-forming units (CFU) using next-generation sequencing data.

Neoprospecta, *Bioinformatician*

JUN 2018 — AUG 2019 (Florianópolis, SC - Brazil)

- Develop, implement, and maintain bioinformatics pipelines.
- Microbiome data analysis consultancy for academia and industry.
- Research: hospital microbiome and infection control.

Immunology Lab (School of Pharmacy - UFRGS), *Research and Teaching Assistant*

JAN 2016 — MAY 2018 (Porto Alegre, RS - Brazil)

- TA: Immunology, Clinical Immunology, and Immunodiagnostics.
- RA: idiopathic pulmonary fibrosis using gene expression data.

Rohwer Lab (San Diego State University), *Research Assistant*

MAY 2015 — AUG 2015 (San Diego, CA - USA)

- Internship as part of the *Science without Borders* program.
- RA: laboratory protocols for endotoxin-free bacteriophage stock preparation.

SKILLS

* Superscripts index related publications.

R & Python

- Tidyverse, Bioconductor, brms, rstan
- Django, common python data science libraries

Bayesian modeling[1, 2]

Machine Learning[3]

Data types and wet lab:

- Microbiome[1,6]
- Cell image[3]
- Gene expression[4]
- Immunology[4]
- Microbiology[5, 2]

PostgreSQL, BigQuery

Django REST API & Flask

Google Cloud Platform

Unix & shell scripting

COMPLEMENTARY EDUCATION

MITx, *Micromasters in Statistics and Data Science*

MAY 2019 — DEC 2020 (Boston, MA - USA)

Delivered online by MIT faculty through the EdX platform. Comprising advanced, in-depth courses on probability theory, statistics, machine learning, and data analysis - plus a capstone (proctored exam) for each discipline.

Harvardx, *Professional Certificate in Data Analysis for the Life Sciences*

FEB 2018 — JUL 2018 (Cambridge, MA - USA)

Delivered online by Harvard faculty through the EdX platform. Comprising four courses on statistical computing and high-dimensional data analysis.

AWARDS

Concord University, *Science without Borders (CAPES)*

JUL 2014 — MAY 2015 (Athens, WV - USA)

Student exchange program sponsored by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), a federal foundation within the Brazilian Minitry of Education.

SELECTED PUBLICATIONS

* Indices relate to superscripts from the skills section. See the complete list at Google Scholar.

1) **Cruz GNF** [+], Christoff AP [+], Oliveira LFV. 2020. "Equivolumetric protocol generates library sizes proportional to total microbial load in next-generation sequencing". *BioRxiv*. https://doi.org/10.1101/2020.02.03.932301

2) Christoff AP [+], **Cruz GNF** [+] et al. 2020. "Swab pooling for large-scale RT-qPCR screening of SARS-CoV-2". *MedRxiv*. https://doi.org/10.1101/2020.09.03.20187732

3) Lopes W [+], **Cruz GNF** [+], Rodrigues ML, Vainstein MH, Kmetzsch L, Staats CC, Vainstein MH, Schrank A. 2020. "Scanning electron microscopy and machine learning reveal heterogeneity in capsular morphotypes of the human pathogen Cryptococcus spp.". *Scientific Reports.* https://doi.org/10.1038/s41598-020-59276-w

4) **Cruz GNF**. 2018. "Genomic analysis of macrophage gene signatures during idiopathic pulmonary fibrosis development". *UFRGS*. Final undergraduate monograph. http://hdl.handle.net/10183/195681

5) Bonilla N, Rojas MI, **Cruz GNF**, Hung S, Rohwer F, Barr JJ. 2016. "Phage on tap–a quick and efficient protocol for the preparation of bacteriophage laboratory stocks". *PeerJ*. https://doi.org/10.7717/peerj.2261

6) Christoff AP, Sereia AFR, **Cruz GNF**, et al. 2020. "One-year cross-sectional study in adult and neonatal intensive care units reveals the bacterial and antimicrobial resistance genes profiles in patients and hospital surfaces". *Plos One*. https://doi.org/10.1371/journal.pone.0234127

7) Saraiva PJ, **Cruz GNF**. "Diagnóstico e tratamento da sífilis". In: Associação Brasileira de Ciências Farmacêuticas; Pereira LRL, Farias RF, Castro MS, organizadores. PROFARMA: Programa de Atualização em Ciências Farmacêuticas: da Assistência Farmacêutica à Farmácia Clínica. Ciclo 1. Porto Alegre: Artmed Panamericana; 2019. p. 129-64. (Sistema de Educação Continuada a Distância, v.3).

[+]These authors contributed equally to the corresponding work.