

Giuliano Netto Flores Cruz

BPharm, MSc

Vancouver, BC - Canada
cruz.gnf@gmail.com
<https://giulianonetto.netlify.app/>

EDUCATION

The University of British Columbia (UBC), Ph.D. in Statistics

SEPT 2023 — present (Vancouver, BC - Canada). Advisor: Keegan Korthauer, PhD

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

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

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

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

EXPERIENCE

BC Children's Hospital Research Institute, Research Assistant

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.
- Bayesian modeling and decision analysis of clinical utility of clinical prediction models.

BiomeHub, Statistical Bioinformatician

SEP 2019 — PRESENT (Florianópolis, SC - Brazil)

- Development of statistical models to estimate colony-forming units (CFU) of industry-contaminating bacteria using next-generation sequencing (NGS) data.
- Design and analysis of NGS experiments and clinical studies (diagnostic test accuracy and randomized trials).
- Develop, implement, and maintain bioinformatics pipelines.
- Microbiome data analysis consultancy for academia and industry.

Neoprospecta, Bioinformatician

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

- Develop, implement, and maintain bioinformatics pipelines.
- Microbiome data analysis consultancy for academia and industry.

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

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

- TA: Immunology, Clinical Immunology, and Immunodiagnosics.
- 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* exchange program.
- RA: lab protocols for endotoxin-free bacteriophage stock preparation.

SKILLS

* Superscripts index related publications.

R & Python

- Tidyverse, Bioconductor, brms, rstan
- Django (web dev), pandas, numpy, pytorch, plotnine

Bayesian modeling and decision analysis^{1,2,3}

Machine Learning^{2,5}

Data types and wet lab:

- Microbiome^{2,7}
- Cell imaging⁵
- Gene expression⁴
- Classical microbiology⁶

PostgreSQL, BigQuery

Django REST API & Flask

Google Cloud Platform

Docker & Singularity

Unix & shell scripting

AWARDS

The University of British Columbia, Four-year Fellowship (4YF)

SEP 2023 — AUG 2027 (Vancouver, BC - Canada)

Selected by the Department of Statistics as the 2023 recipient of UBC's premier Ph.D. fellowship.

Concord University, Science without Borders (CAPES)

JUL 2014 — AUG 2015 (Athens, WV & San Diego, CA - USA)

Student exchange program sponsored by the Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES), Brazilian Ministry of Education.

COMPLEMENTARY EDUCATION

edX/MITx, Micromasters in Statistics and Data Science

MAY 2019 — DEC 2020 (online)

Advanced courses on probability, statistics, machine learning, and data analysis, plus a capstone (proctored) examination.

SOFTWARE

BayesDCA ([website](#)): R package to perform Bayesian Decision Curve Analysis (preprint below).

SELECTED PUBLICATIONS

* Indices relate to superscripts from the skills section. See the complete list at [Google Scholar](#).

- 1) **Cruz GNF**, Korthauer K. 2024. Bayesian Decision Curve Analysis with bayesDCA. *Statistics in Medicine*. <https://doi.org/10.1002/sim.10277>
- 2) **Cruz GNF**⁺, Christoff AP⁺, Oliveira LFV. 2021. "Equivolumetric protocol generates library sizes proportional to total microbial load in next-generation sequencing". *Frontiers in Microbiology*. <https://doi.org/10.3389/fmicb.2021.638231>
- 3) Christoff AP⁺, **Cruz GNF**⁺ et al. 2021. "Swab pooling for large-scale RT-qPCR screening of SARS-CoV-2". *Plos One*. <https://doi.org/10.1371/journal.pone.0246544>
- 4) Life B, Petkau TL, **Cruz GNF**, Navarro-Delgado EI, Shen N, Korthauer K, Leavitt BR. 2023. "FTD-associated behavioural and transcriptomic abnormalities in 'humanized' progranulin-deficient mice: A novel model for progranulin-associated FTD". *Neurobiology of Disease*. <https://doi.org/10.1016/j.nbd.2023.106138>
- 5) 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>
- 6) 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>
- 7) 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>