




Fabio Zanini

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Research

Group Leader, Data Driven Biomedicine lab, University of New South Wales, since Fall 2019.

Single cell analyses of infection, immunology, and lung development; machine learning on cell atlases.

Postdoctoral Scholar in Bioengineering, Stanford University, 2016-2019.

Research topic: Single-cell transcriptomics of *flavivirus* infection *in vitro* and *in vivo*.

P.I.: Prof. Stephen R. Quake

PhD in Bioinformatics, Max Planck Institute for Developmental Biology and Universität Tübingen, 2015.


Thesis: Population Genomics of Inpatient HIV Evolution.


Supervisors: Dr. Richard Neher and Prof. Daniel Huson

M.Sc. and Diplom in Physics, Università degli Studi di Trento and Universität Tübingen, 2011.

B.Sc. in Physics, Università degli Studi di Trento, 2008.

Selected Publications

 Google Scholar: <https://scholar.google.com/citations?user=XMDw5-4AAAAJ> (469 citations, h-index 13).

 Github: <https://github.com/iosonofabio/> (50 repositories, 465 contributions in the last year).

F. Zanini*, B. Berghuis*, R. C Jones, B. Nicolis di Robilant, R. Y Nong, J. Norton, M. F Clarke, S. R. Quake. northstar: leveraging cell atlases to identify healthy and neoplastic cells in transcriptomes from human tumors. *Scientific Reports* (2019)

R. Domingo-Gonzales*, F. Zanini*, X. Che, M. Liu, R. C. Jones, M. A. Swift, S. R. Quake, D. N. Cornfield, C. M. Alvira. Diverse homeostatic and immunomodulatory roles of immune cells in the developing mouse lung at single cell resolution. *eLife* (2020)

Z. Yao*, F. Zanini*, S. Kumar, N. Panpradist, A. Muniz, S. R. Quake, S. Einav. The transcriptional landscape of Venezuelan equine encephalitis virus infection. *bioRxiv* (2020)

F. Zanini*, M. Robinson*, D. Croote, M. Kumar Sahoo, A. M Sanz, E. Ortiz-Lasso, L. Luis Albornoz, F. R Suarez, J. G Montoya, L. Goo, B. A Pinsky, S. R. Quake, S. Einav. Virus-inclusive single cell RNA sequencing reveals the molecular signature predictive of progression to severe dengue. *PNAS* (2018)

The Tabula Muris Consortium (F. Zanini: Logistical coordination, Organ collection and processing, Computational data analysis, Writing group). Single-cell transcriptomics of 20 mouse organs creates a Tabula Muris. *Nature* (2018)

A. Christensen-Quick, A. Chaillon, C. Yek, F. Zanini, P. Jordan, C. Ignacio, G. Caballero, S. Gianella, D. Smith. Influenza Vaccination Can Broadly Activate the HIV Reservoir During Antiretroviral Therapy. *Journal of Acquired Immune Deficiency Syndromes* (2018)

S. Y Pu, F. Xiao, S. Schor, E. Bekerman, F. Zanini, R. Barouch-Bentov, C. M Nagamine, S. Einav. Feasibility and biological rationale of repurposing sunitinib and erlotinib for dengue treatment. *Antiviral research* (2018)

F. Zanini, S. Y. Pu, E. Bekerman, S. Einav, S. R. Quake. Single-cell transcriptional dynamics of flavivirus infection. *eLife* (2018)

F. Zanini, J. Brodin, J. Albert, R. A Neher. Error rates, PCR recombination, and sampling depth in HIV-1 whole genome deep sequencing. *Virus research* (2017)

F. Zanini, V. Puller, J. Brodin, J. Albert, R. A. Neher. In vivo mutation rates and the landscape of fitness costs of HIV-1. *Virus Evolution* (2017)

J. Brodin, F. Zanini, L. Thebo, C. Lanz, G. Bratt, R. A Neher, J. Albert. Establishment and stability of the latent HIV-1 DNA reservoir. *eLife* (2016)

F. Zanini J. Brodin, L. Thebo, C. Lanz, G. Bratt, J. Albert, R. A Neher. Population genomics of inpatient HIV-1 evolution. *eLife* 4 (2015)

F. Zanini and R. A. Neher. Quantifying selection against synonymous mutations in HIV-1 env evolution. *Journal of virology* (2013)

F. Zanini and R. A. Neher. FFPopSim: an efficient forward simulation package for the evolution of large populations. *Bioinformatics* (2012)

Patents

F. Zanini et al. Antibodies against dengue virus and related methods, US Provisional Application No. 62/715,628 (2018)

Grants and Awards

Chan Zuckerberg Initiative Grant for Essential Open Source Software, 2020-2021.

UNSW Cellular Genomics Future Institute Seed Grant, 2021-2022.

Symbiont Award at the Pacific Symposium on Biocomputing, 2018.

EMBO long-term postdoctoral fellowship, 2016-2018.

Excellent Master Student Award, Università degli Studi di Trento, 2011.

Double Degree Scholarship (Italy-Germany), 2008-2010.

Best Bachelor Applicant Scholarship, Università degli Studi di Trento, 2005-2008.

Teaching and Outreach

I routinely teach Scientific Programming for biomedicine students and researchers.

Supervising 5 students and 2 postdocs since starting my own lab (2019-2020).

Mentored 5 graduate students during my postdoc (2016-2019).

Member of the selection committee for the Symbiont Research Award (2018-2020).

Mentor at the Stanford Inclusive Postdoc:Grad Program "Someone like me", 2018.

I am a strong open source and open science advocate.