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 Intrapatient HIV Evolution.
Supervisors: Dr. Richard Neher and Prof. Daniel Huson

M.Sc. and Diplom in Physics, Università degli Studi di Trento and Universität Tübingen, 2008-2011.

B.Sc. in Physics, Università degli Studi di Trento, 2005-2008.

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).

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, 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. bioRxiv (2019)

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 intrapatient 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.