

ADVANCED BIOINFORMATIC TECHNIQUES FOR MICROBIAL ANALYSIS AND DIAGNOSTICS

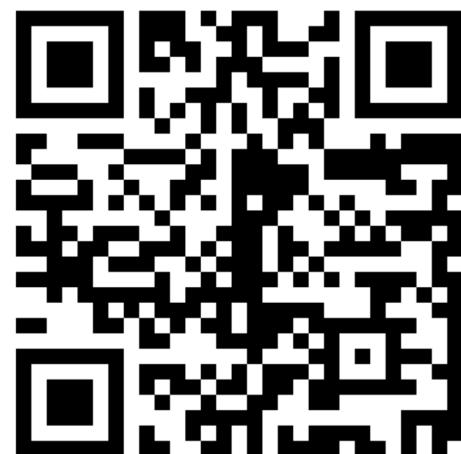
Dr. Michael B Hall



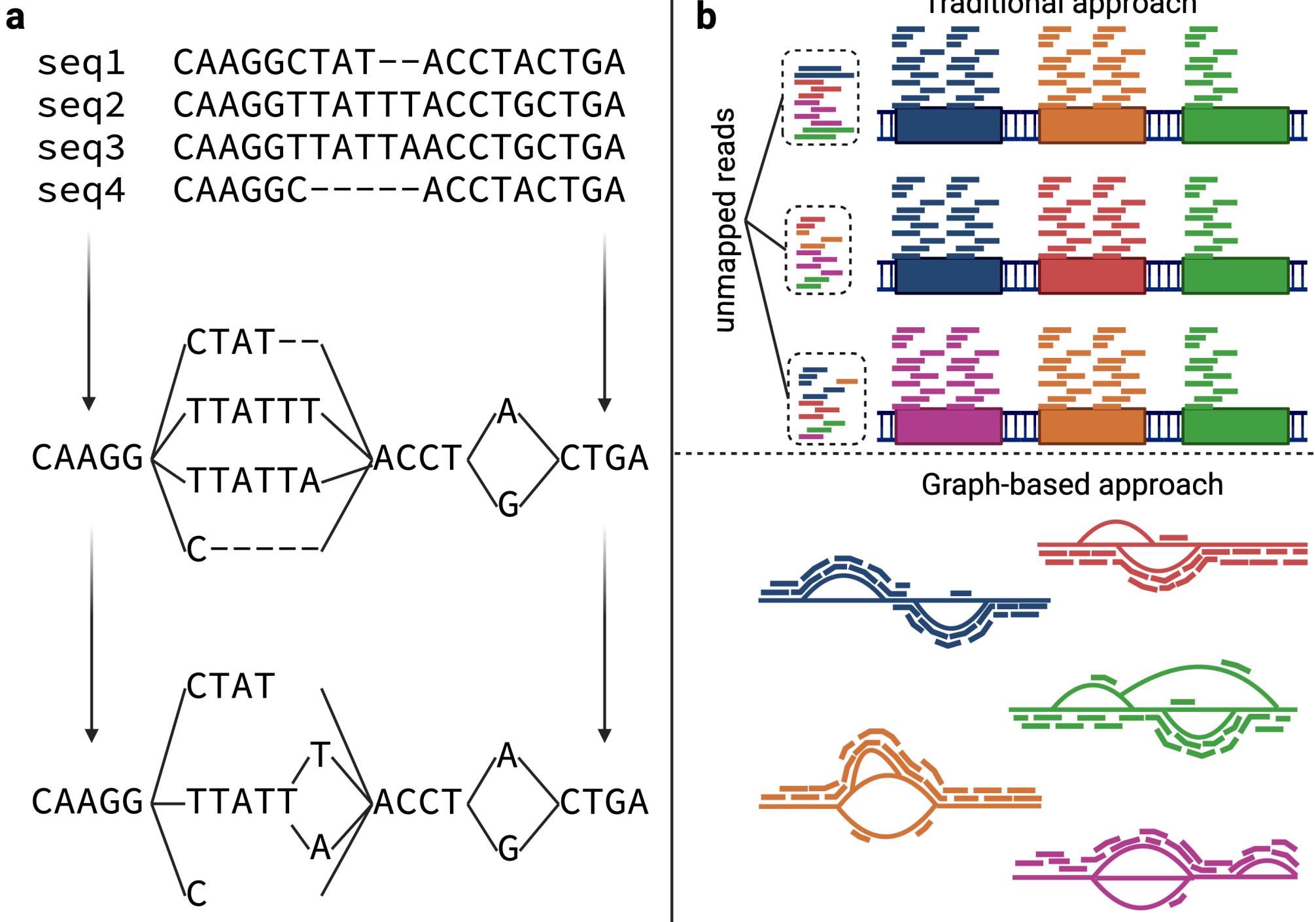
@mbh.sh



@mbhall88



GENOME GRAPHS



GENOME GRAPHS

Method | [Open access](#) | Published: 14 September 2021

Pandora: nucleotide-resolution bacterial pan-genomics with reference graphs

[Rachel M. Colquhoun](#), [Michael B. Hall](#), [Leandro Lima](#), [Leah W. Roberts](#), [Kerri M. Malone](#), [Martin Hunt](#),
[Brice Letcher](#), [Jane Hawkey](#), [Sophie George](#), [Louise Pankhurst](#) & [Zamin Iqbal](#) 

Genome Biology 22, Article number: 267 (2021) | [Cite this article](#)

11k Accesses | 28 Citations | 83 Altmetric | [Metrics](#)



GENOME GRAPHS

MICROBIAL GENOMICS

Volume 9, Issue 8

Research Article | Open Access

Drug resistance prediction for *Mycobacterium tuberculosis* with reference graphs

Michael B. Hall^{1,2} , Leandro Lima¹ , Lachlan J. M. Coin²  and Zamin Iqbal¹ 

 View Affiliations

Published: 08 August 2023 | <https://doi.org/10.1099/mgen.0.001081>



NANOPORE SEQUENCING

Research Article

[Ecology, Microbiology and Infectious Disease](#)

Freshwater monitoring by nanopore sequencing

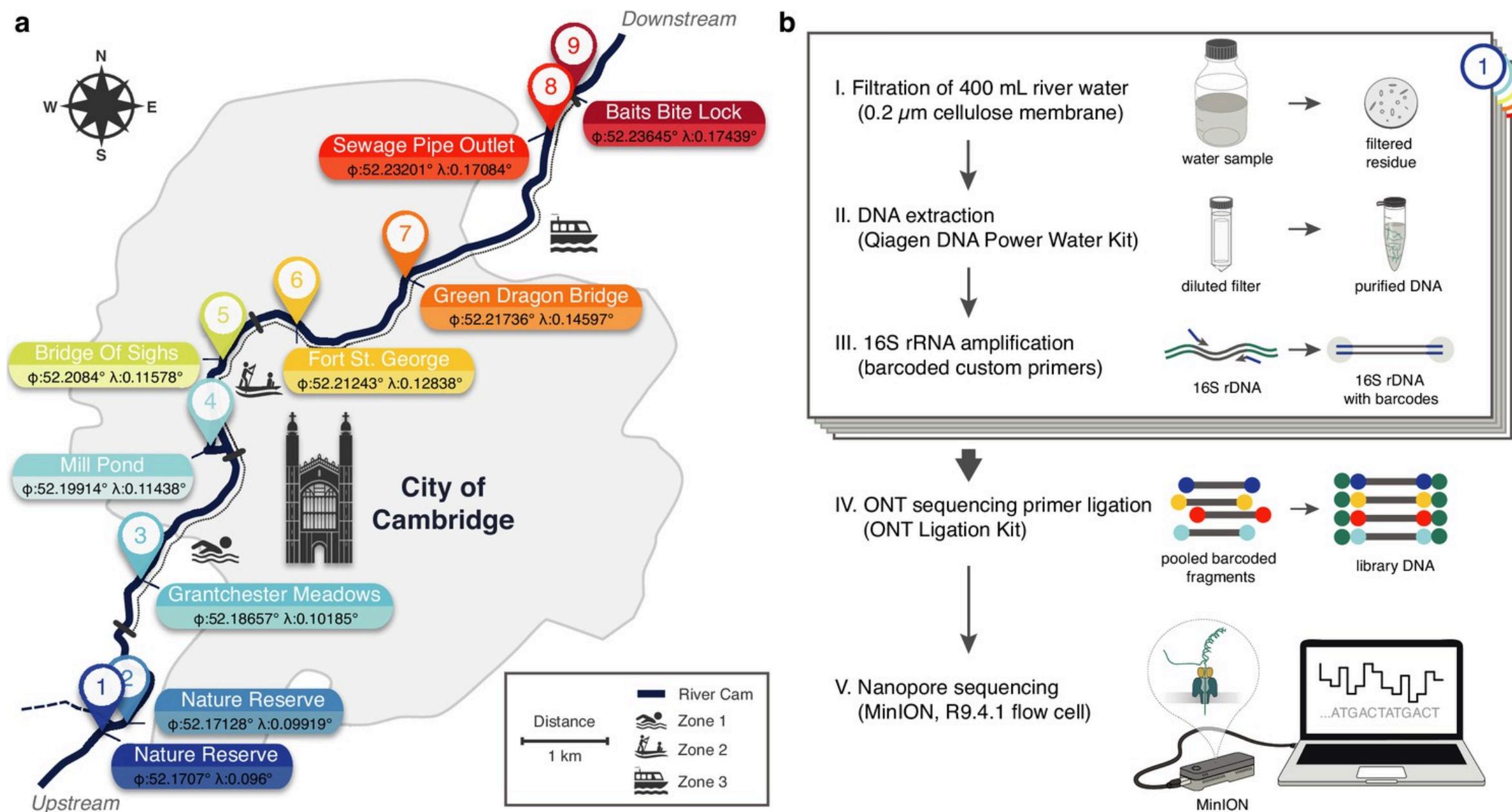
Lara Urban , Andre Holzer , J Jotautas Baronas, Michael B Hall, Philipp Braeuninger-Weimer, Michael J Scherm, Daniel J Kunz, Surangi N Perera, Daniel E Martin-Herranz ... Maximilian R Stammnitz  [see all »](#)

European Bioinformatics Institute, Wellcome Genome Campus, United Kingdom; Department of Plant Sciences, University of Cambridge, United Kingdom; Department of Earth Sciences, University of Cambridge, United Kingdom; Department of Engineering, University of Cambridge, United Kingdom; Department of Biochemistry, University of Cambridge, United Kingdom; Wellcome Sanger Institute, Wellcome Trust Genome Campus, United Kingdom; Department of Physics, University of Cambridge, United Kingdom; Department of Physiology, Development & Neuroscience, University of Cambridge, United Kingdom; Department of Veterinary Medicine, University of Cambridge, United Kingdom

Jan 19, 2021 • <https://doi.org/10.7554/eLife.61504>  



NANOPORE SEQUENCING



NANOPORE SEQUENCING

ARTICLES · Volume 4, Issue 2, E84-E92, February 2023 · Open Access

 Download Full Issue

Evaluation of Nanopore sequencing for *Mycobacterium tuberculosis* drug susceptibility testing and outbreak investigation: a genomic analysis

Michael B Hall, PhD^a · Marie Sylvianne Rabodoarivelox, PhD^{b,c} · Anastasia Koch, PhD^{d,g} ·
Anzaan Dippenaar, PhD^{h,i} · Sophie George, MSc^j · Melanie Grobbelaar, PhD^h. et al. Show more

[Affiliations & Notes ▾](#) [Article Info ▲](#)

Publication History: Published December 19, 2022

DOI: [10.1016/S2666-5247\(22\)00301-9](https://doi.org/10.1016/S2666-5247(22)00301-9) ↗ Also available on [ScienceDirect](#) ↗

Copyright: © 2022 The Author(s). Published by Elsevier Ltd.

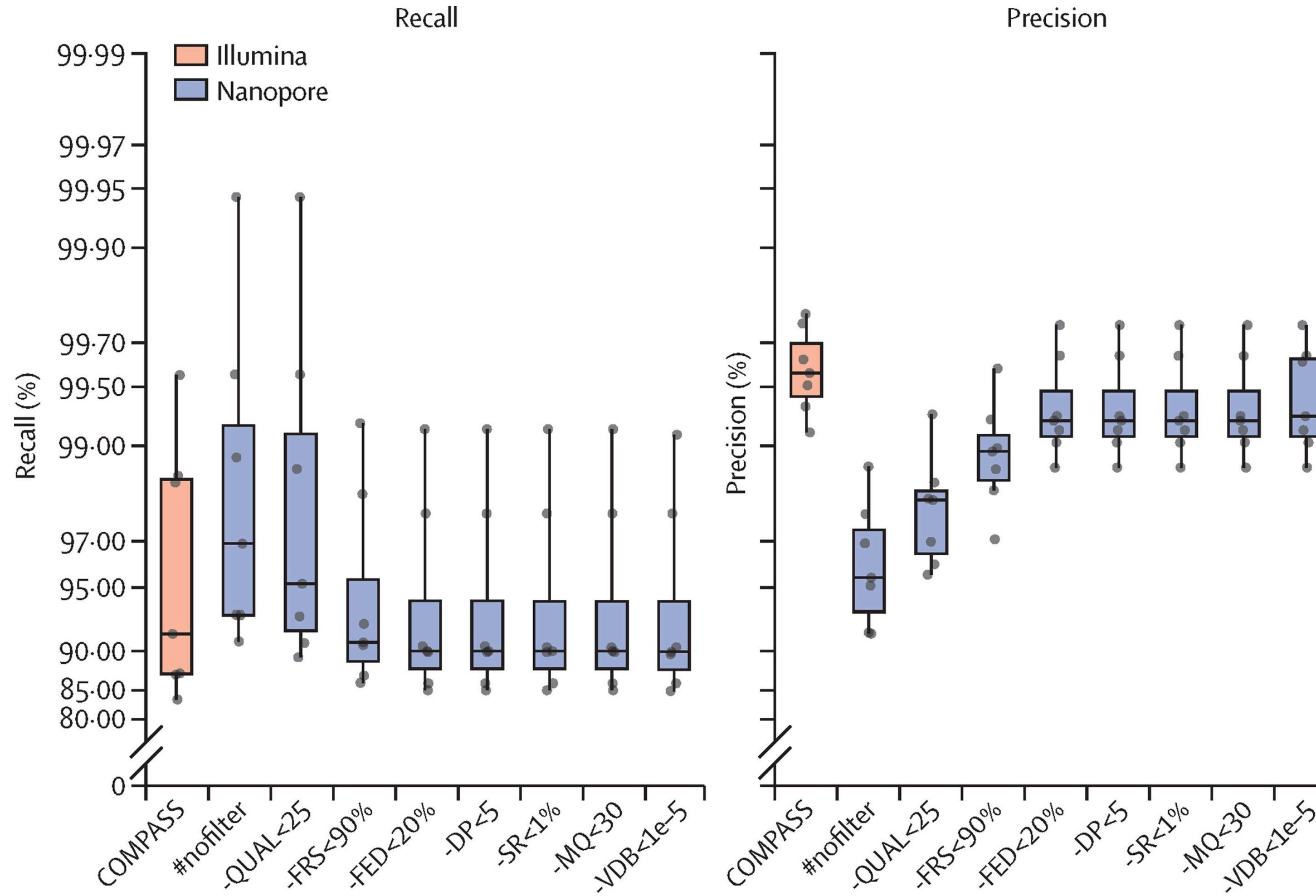
User License: [Creative Commons Attribution \(CC BY 4.0\)](#) ↗ | [Elsevier's open access license policy](#)



 Check for updates

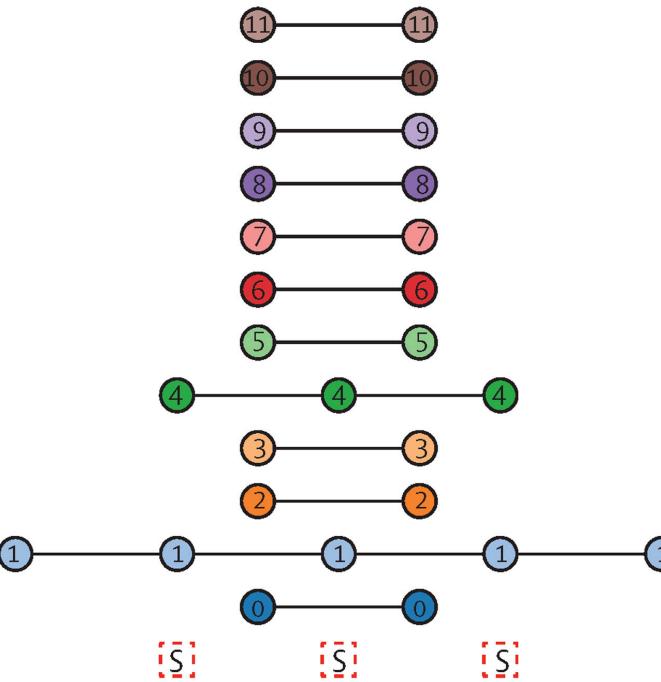


NANOPORE SEQUENCING

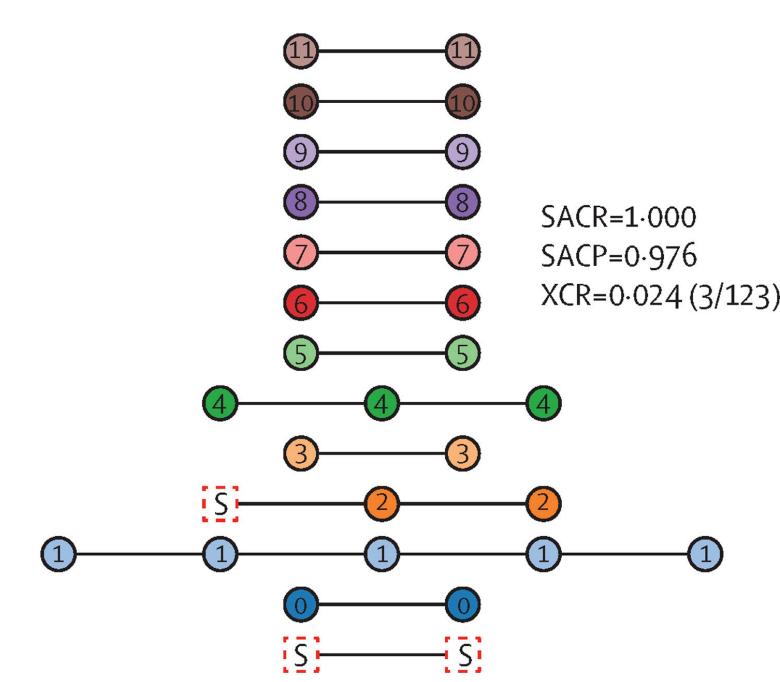


NANOPORE SEQUENCING

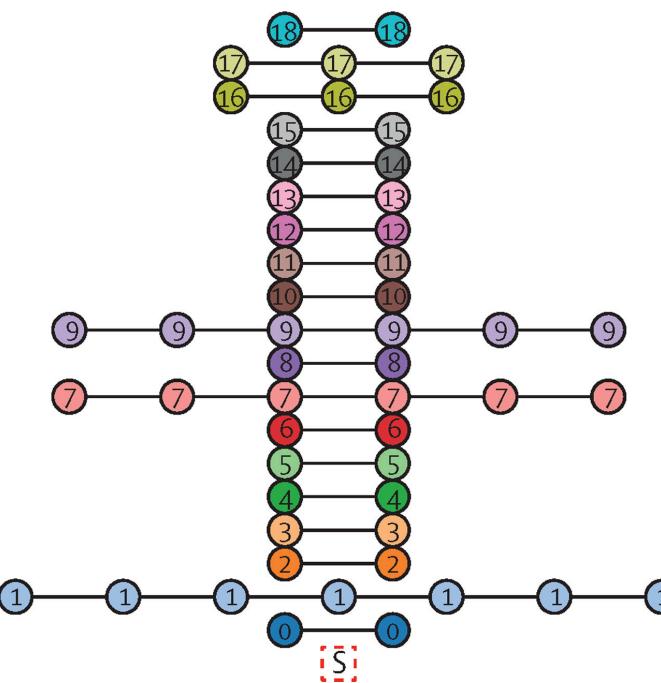
A Illumina threshold=5



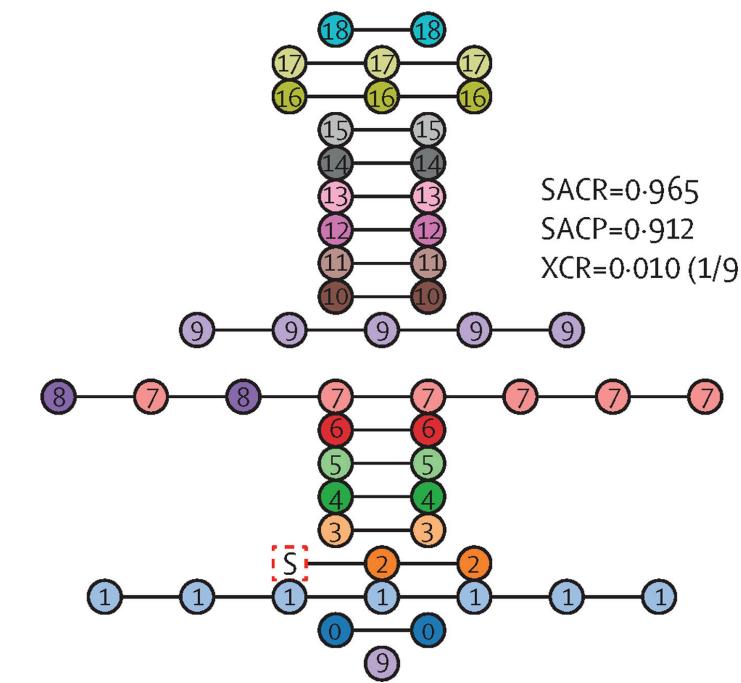
Nanopore threshold=6



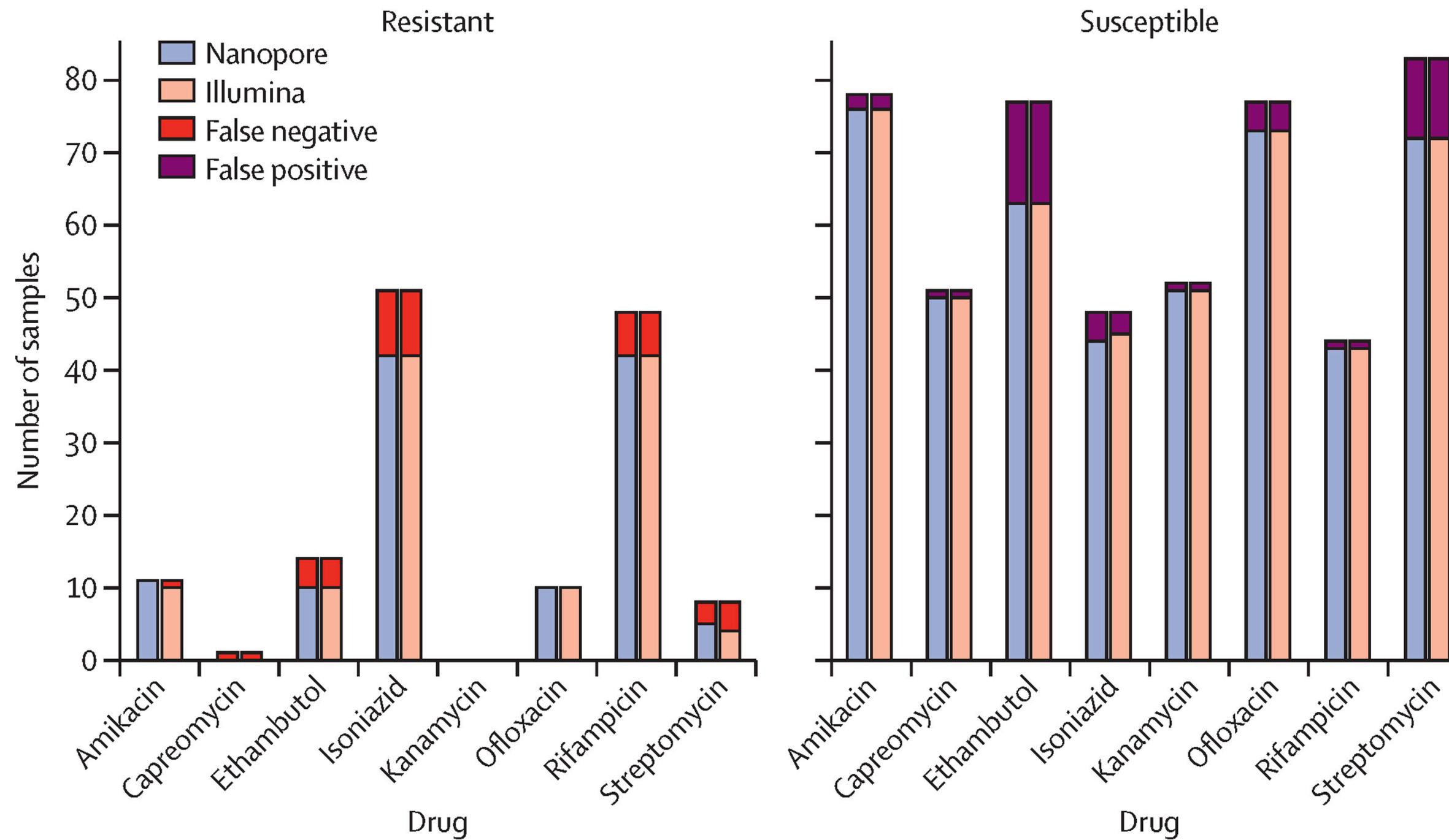
B Illumina threshold=12



Nanopore threshold=12



NANOPORE SEQUENCING



NANOPORE SEQUENCING

Research Article

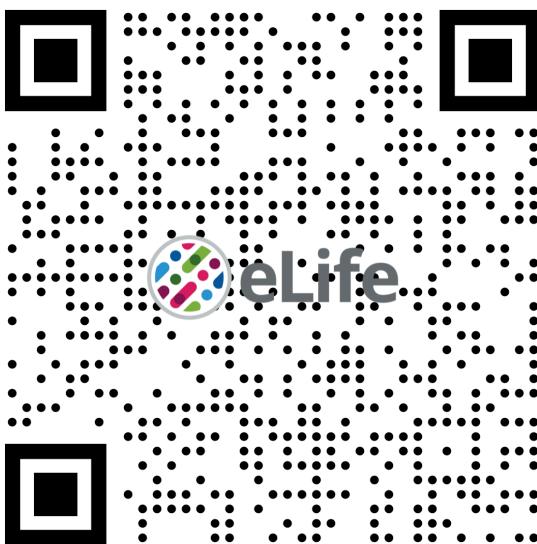
Computational and Systems Biology, Microbiology and Infectious Disease

Benchmarking reveals superiority of deep learning variant callers on bacterial nanopore sequence data

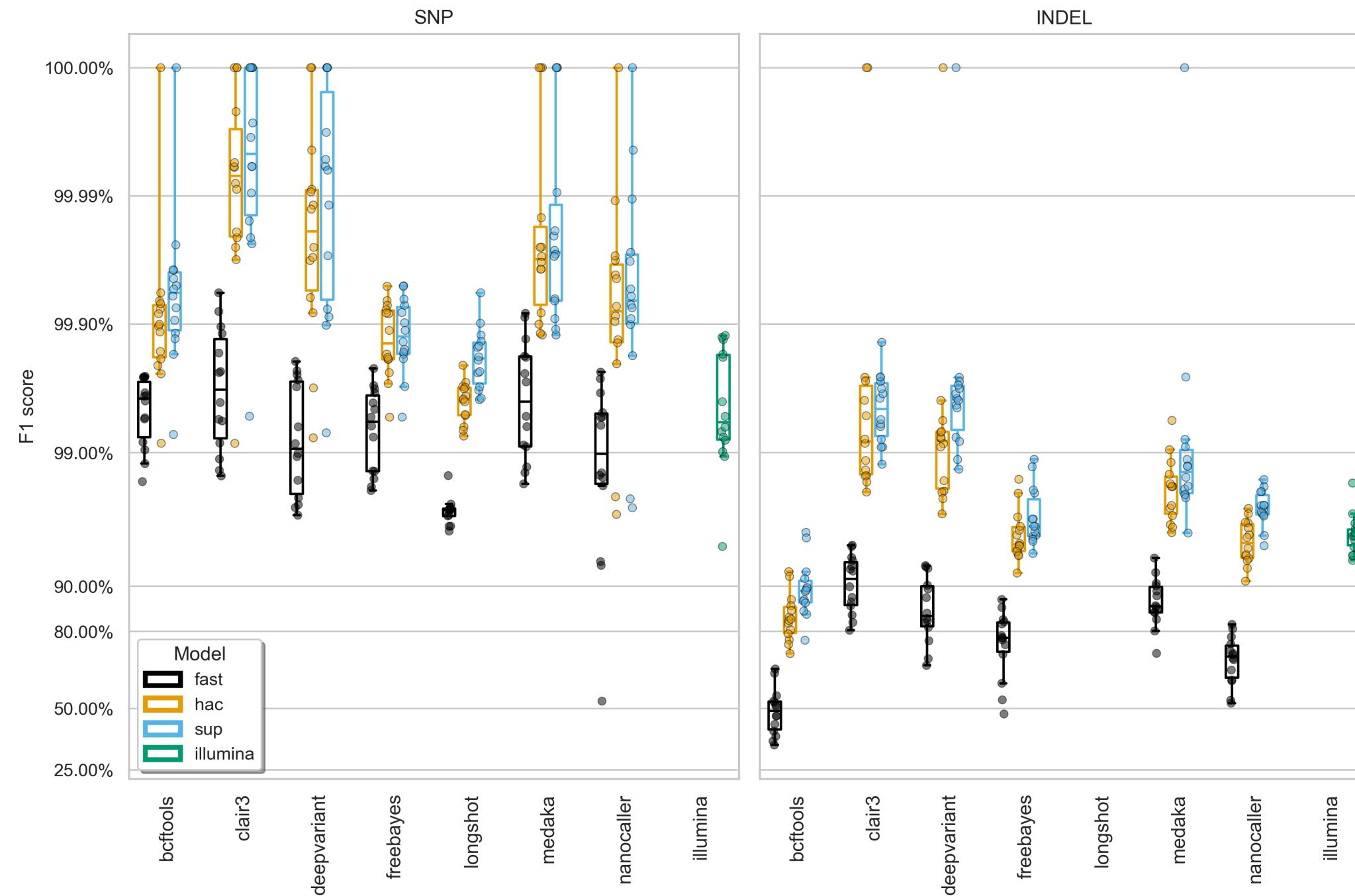
Michael B Hall , Ryan R Wick, Louise M Judd, An N Nguyen, Eike J Steinig, Ouli Xie, Mark Davies, Torsten Seemann, Timothy P Stinear, Lachlan Coin

Department of Microbiology and Immunology, The University of Melbourne, at the Peter Doherty Institute for Infection and Immunity, Australia; Centre for Pathogen Genomics, The University of Melbourne, Australia; Department of Infectious Diseases, The University of Melbourne, at the Peter Doherty Institute for Infection and Immunity, Australia; Monash Infectious Diseases, Monash Health, Australia

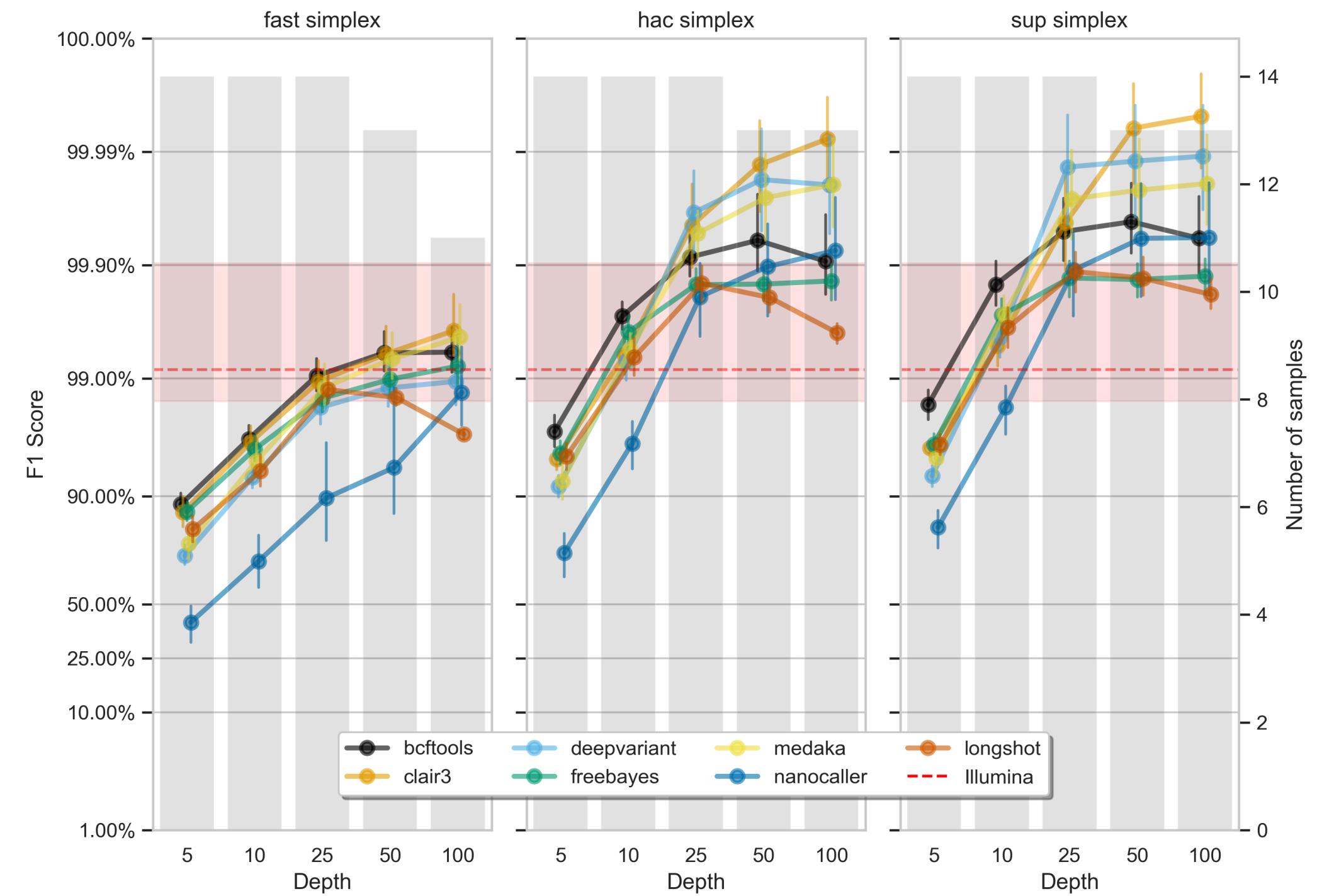
Oct 10, 2024 • <https://doi.org/10.7554/eLife.98300.3> 



NANOPORE SEQUENCING



NANOPORE SEQUENCING



METAGENOMICS

**Pangenome databases improve host removal
and mycobacteria classification from clinical
metagenomic data** 

Michael B Hall , Lachlan J M Coin

GigaScience, Volume 13, 2024, giae010, <https://doi.org/10.1093/gigascience/giae010>

Published: 04 April 2024 **Article history** ▾



github.com/mbhall88/nohuman

RANDOM BIOINFORMATICS

New Results

 [Follow this preprint](#)

Genome size estimation from long read overlaps

 Michael B Hall,  Lachlan J M Coin

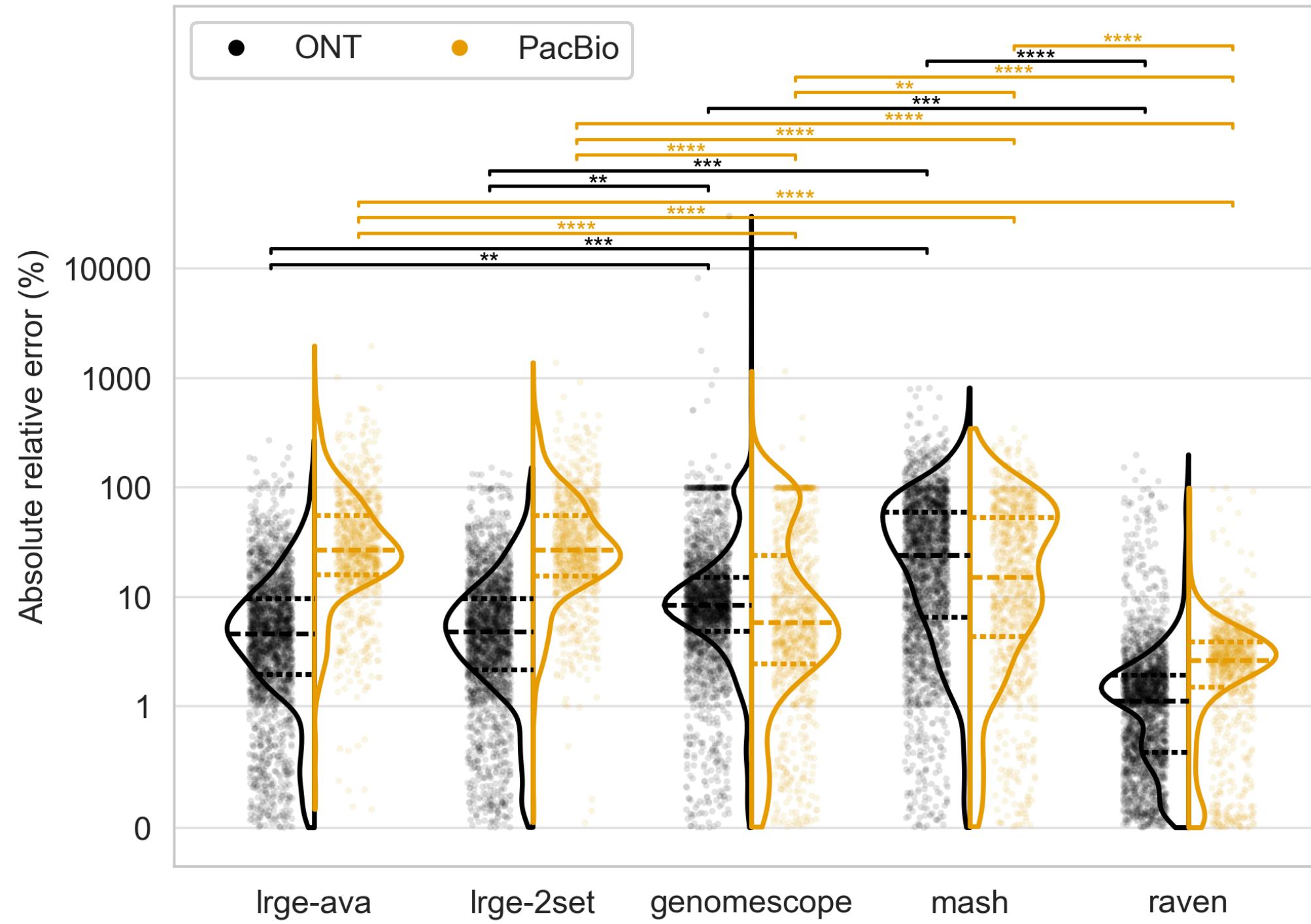
doi: <https://doi.org/10.1101/2024.11.27.625777>

This article is a preprint and has not been certified by peer review [[what does this mean?](#)].

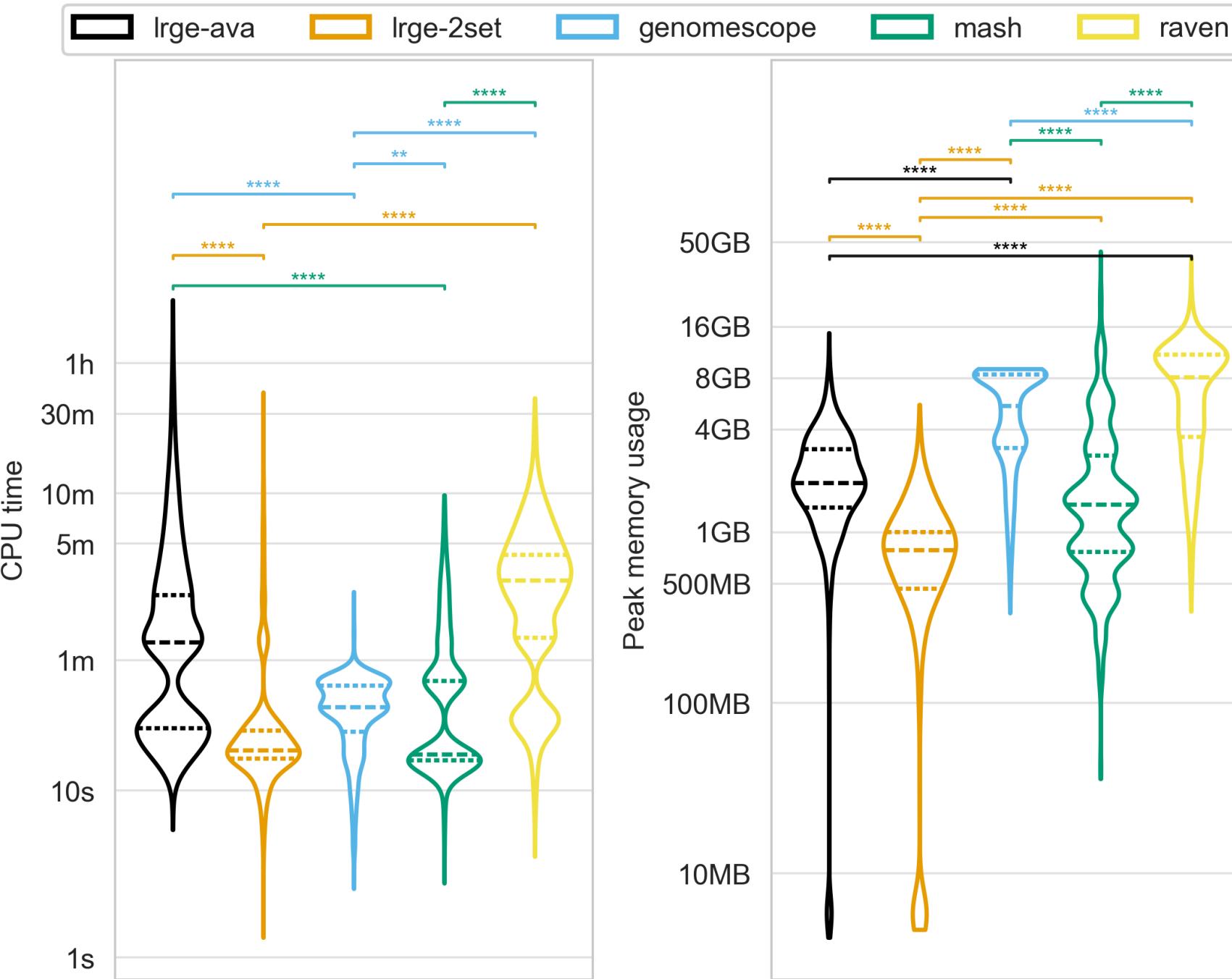


github.com/mbhall88/lrg

RANDOM BIOINFORMATICS



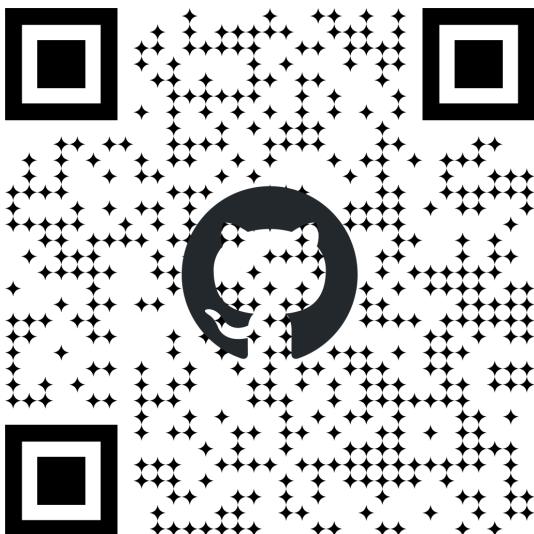
RANDOM BIOINFORMATICS



QUESTIONS?



Slides



Contact



@mbh.sh



@mbhall88