

December 2019

November 2020

May 2021

- Can we predict “short-term” evolutionary dynamics of the virus?

- We can **reliably** detect sites that will substantially increase in frequency in the next three months ($AUC > 0.9$)

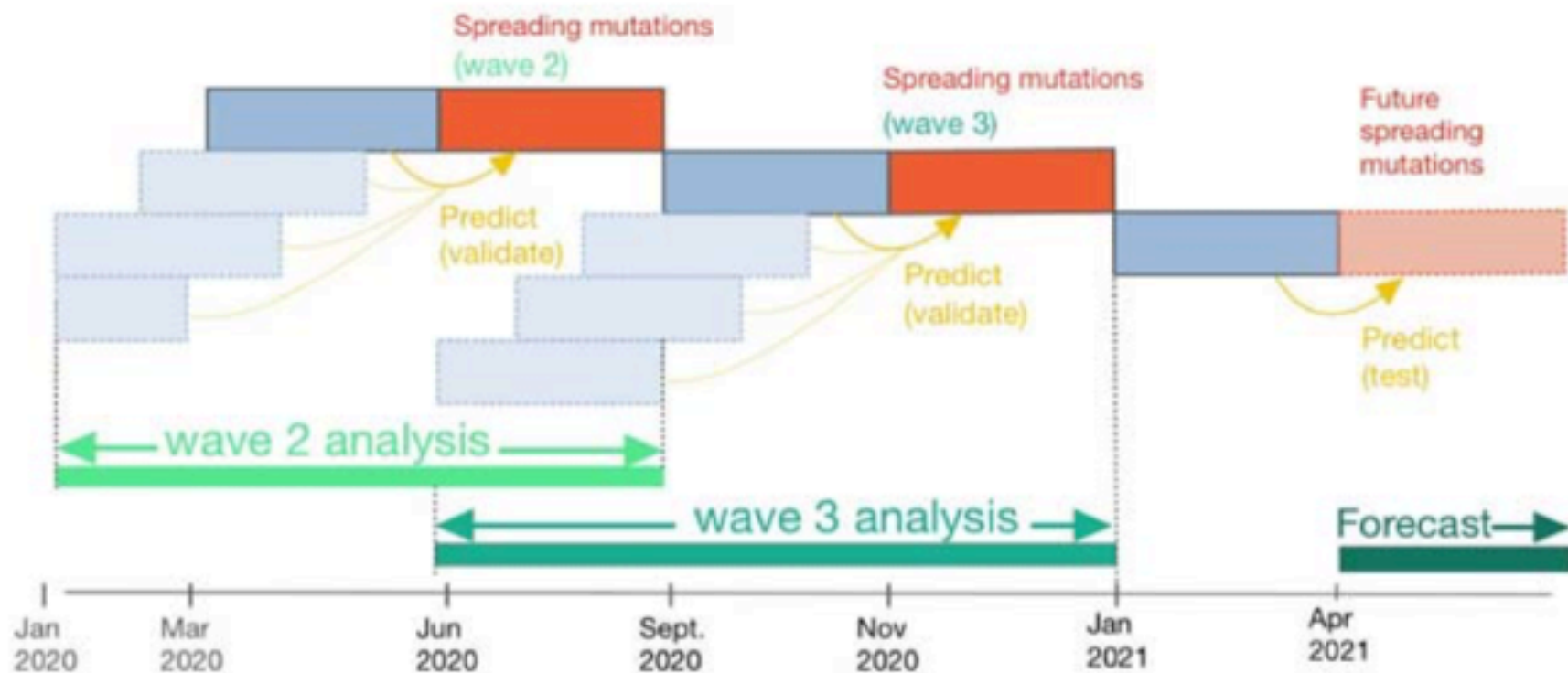
- Most predictive metrics
 - Evidence of positive selection
 - Epidemiological data (**fraction of haplotypes with mutation**)

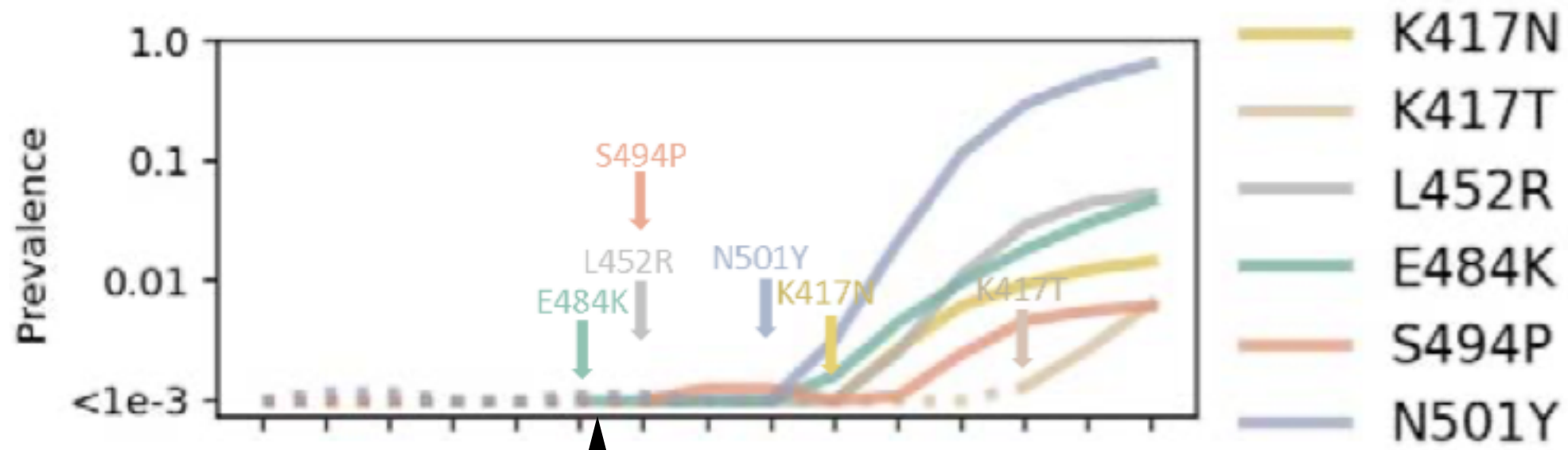
Mathematical 'Predicting the mutational drivers of future SARS-CoV-2 variants' [MedRxiv](#)



Continued evolution, complex
selection dynamics, transition to
endemic?

Validating across waves, forecasting





**Variants detected before increasing
in frequency**

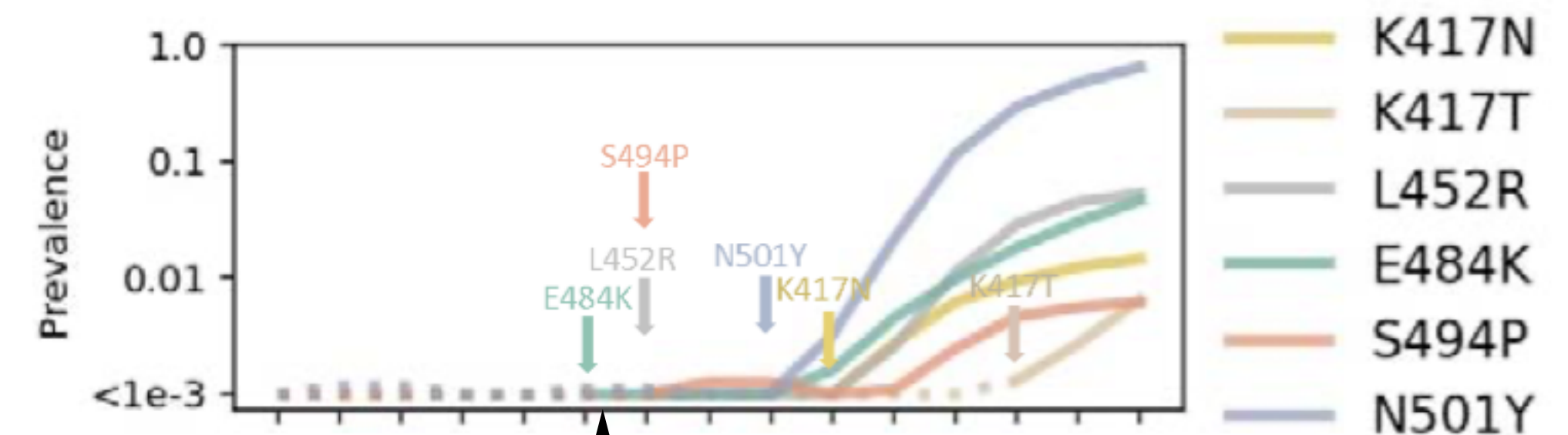
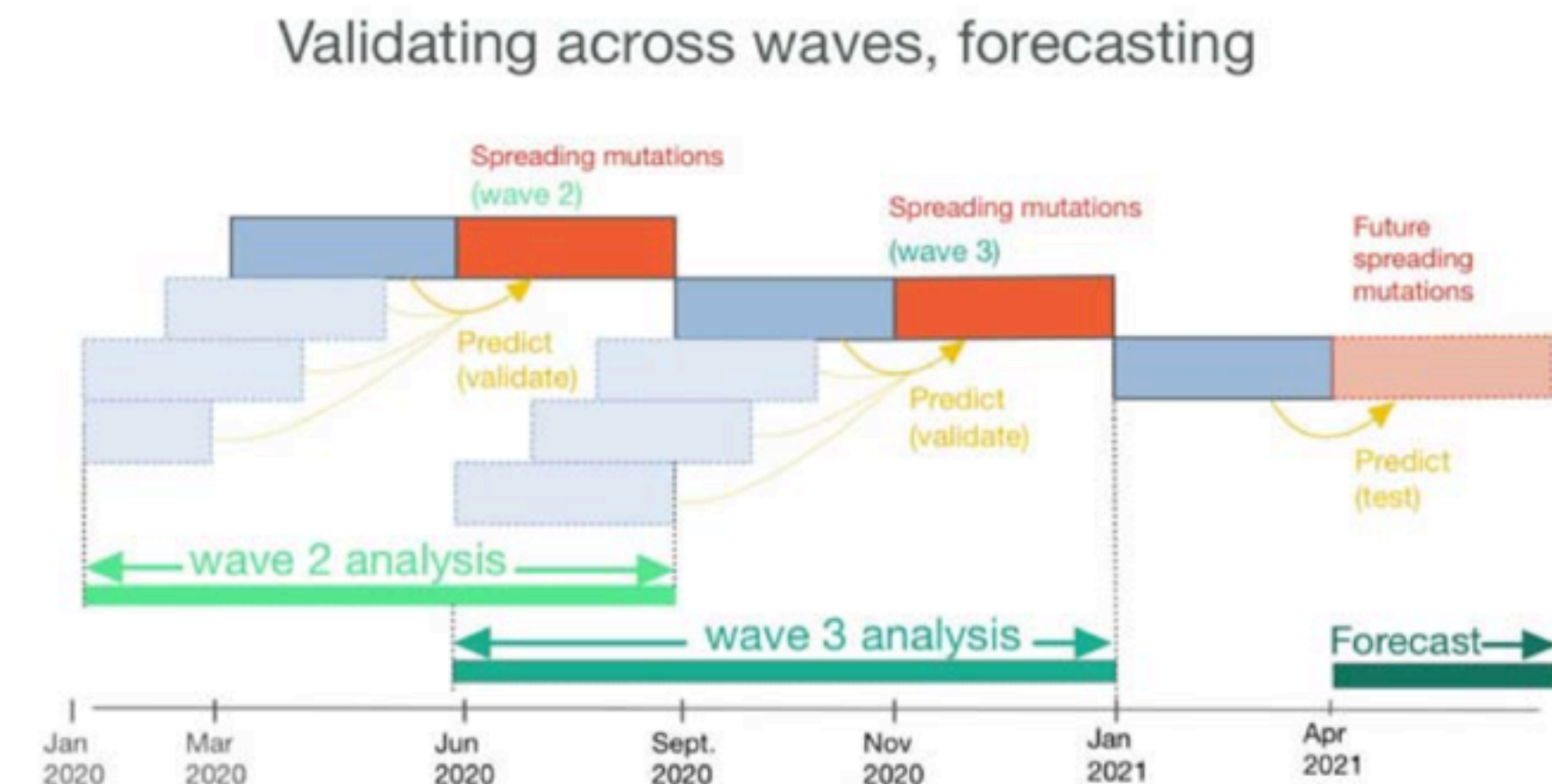
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