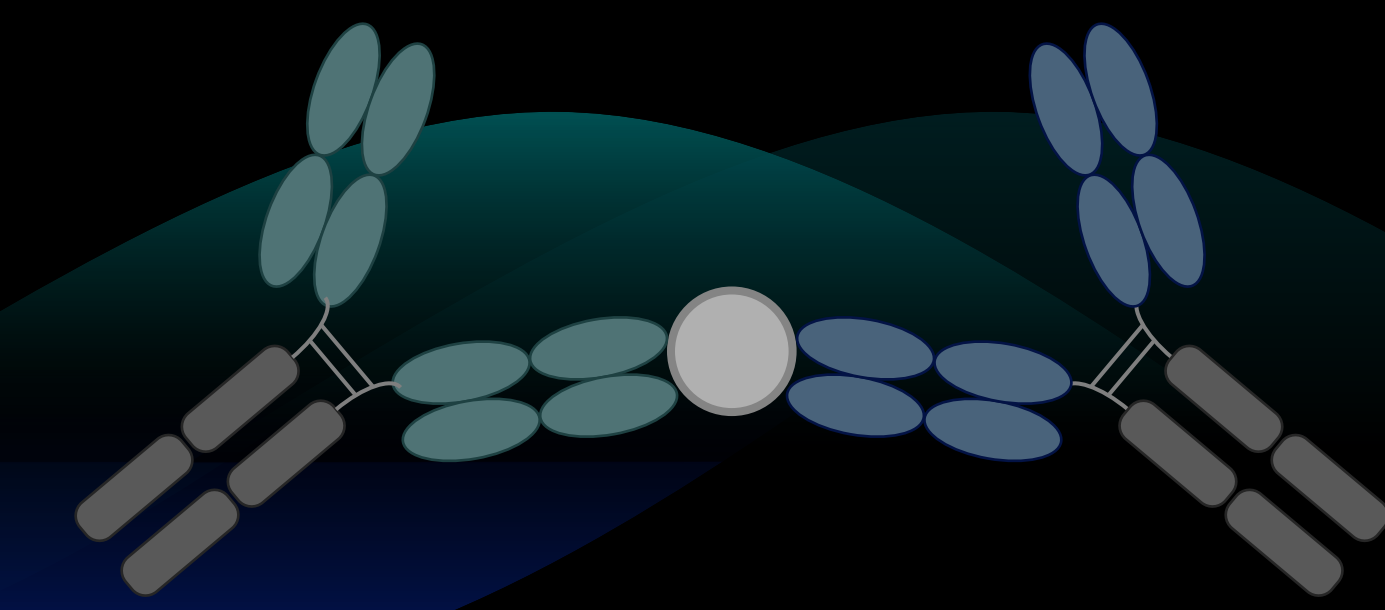


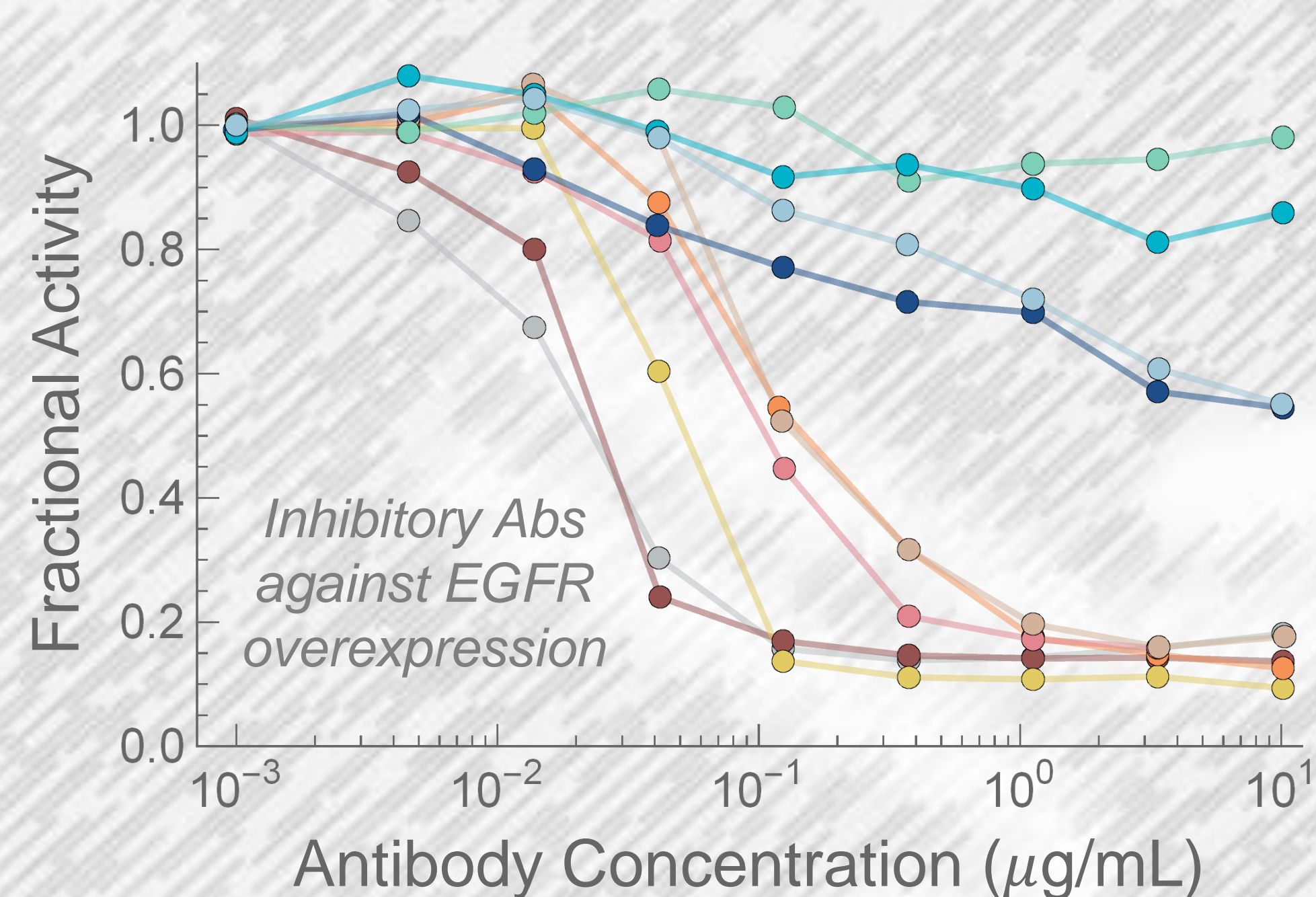


Two Are Better Than One! Predicting the Varied and Counter-Intuitive Actions of Antibody Mixtures

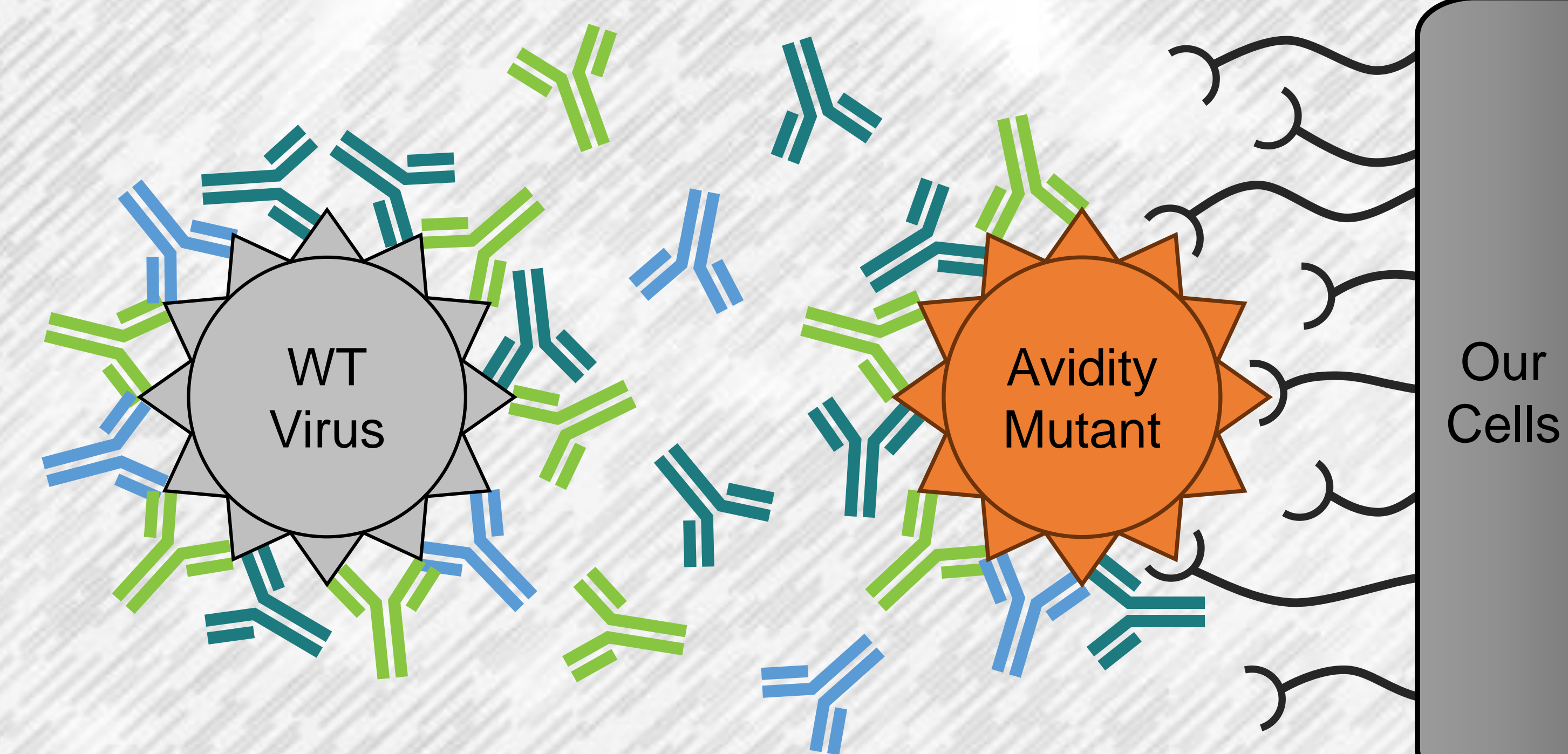


Tal Einav and Jesse Bloom, *Fred Hutch Basic Sciences Division and Computational Biology Program*

The Power to Predict



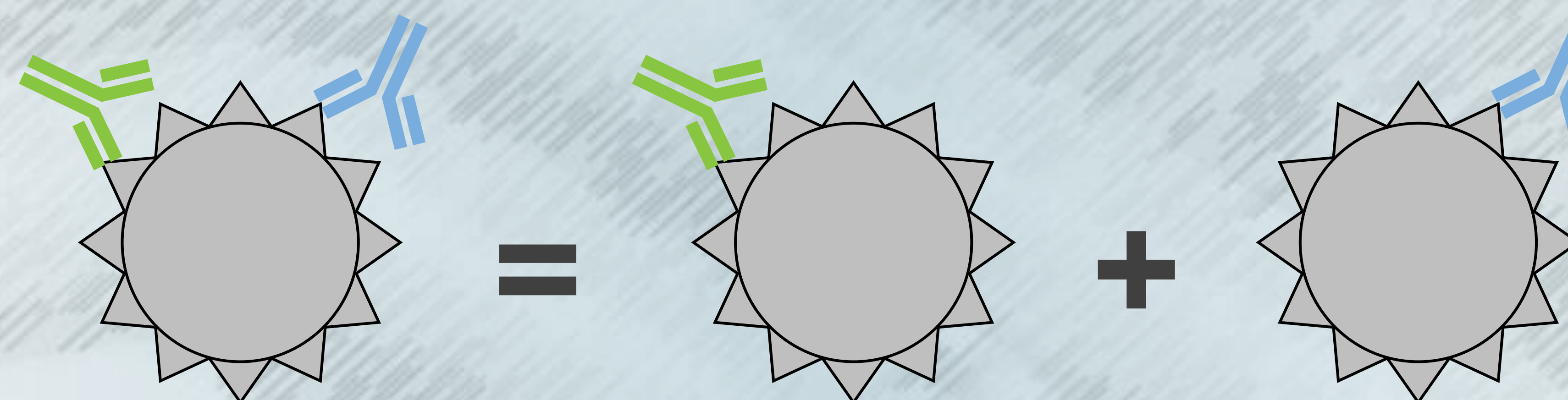
The Curious Case of Avidity



Characterizing n Abs (with n experiments) enables us to predict the potency of all 2^n Ab combinations

Can we predict the potency of an Ab mixture based on its components?

How can viruses evolve in the face of polyclonal antibody protection?

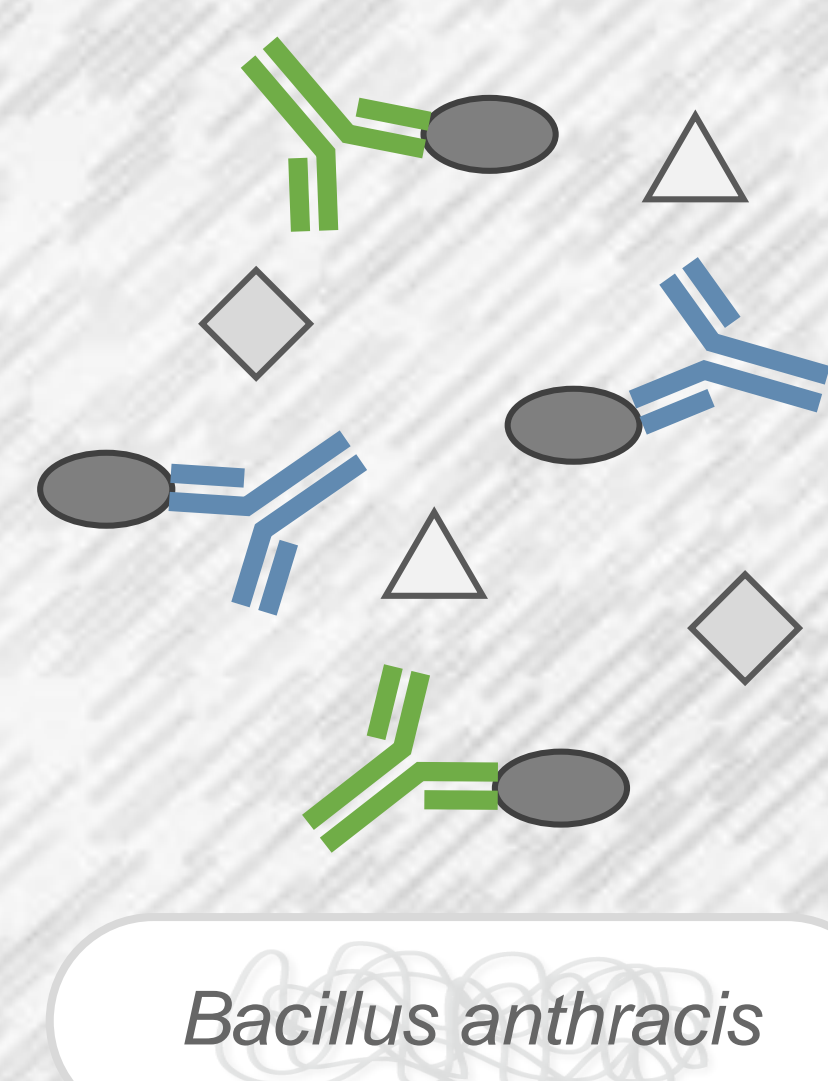
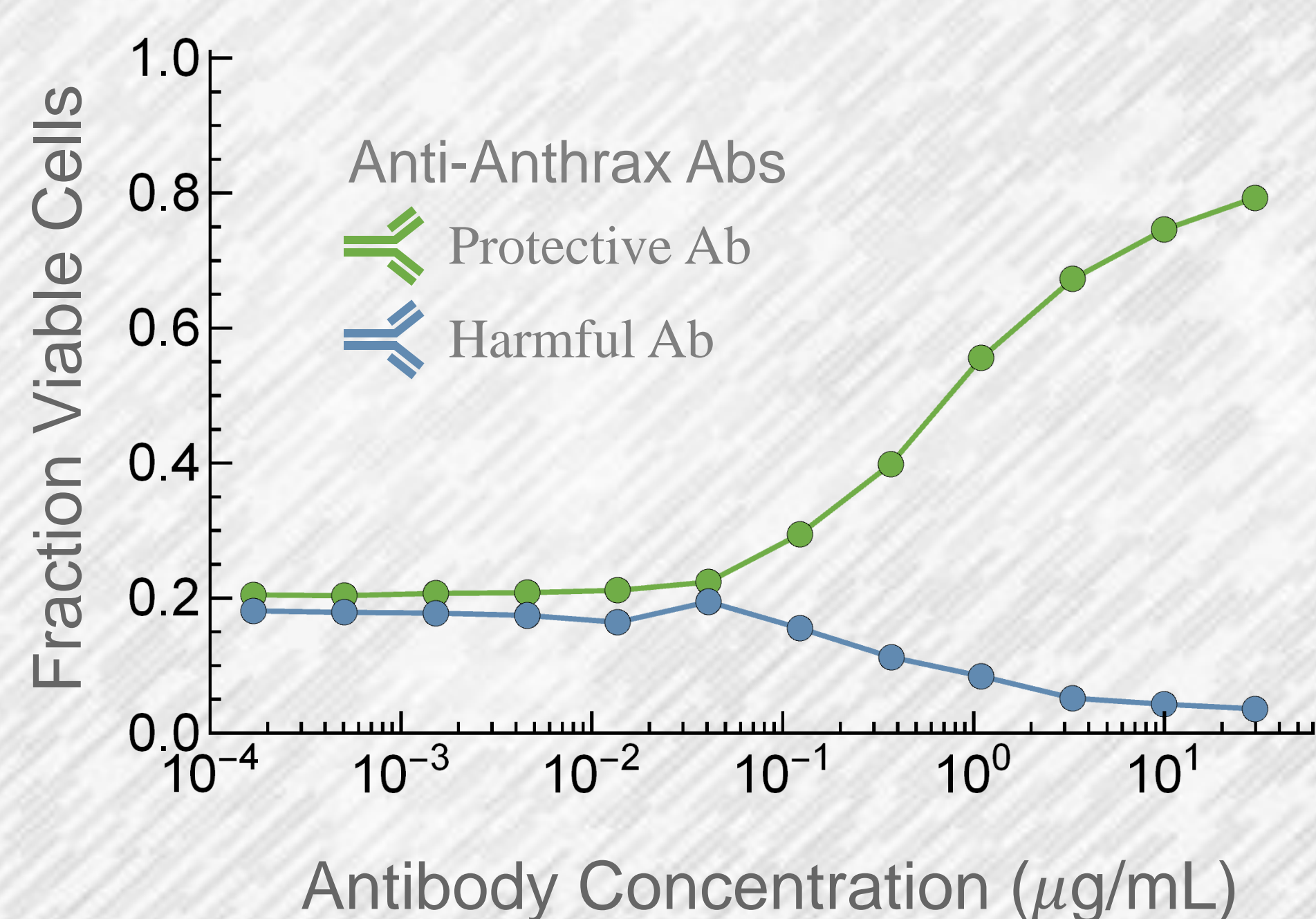


Even independent antibody action can collectively give rise to complex and unintuitive behavior

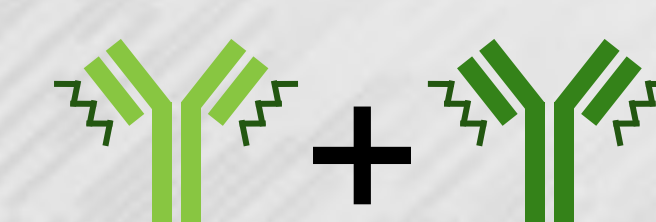
Can we understand and harness clustering to enhance Ab mixtures?

How prevalent and predictable is synergy in concerted Ab action?

Good + Bad = Very Strange



Which Ab dominates?
Non-monotonic response?
Does avidity play a role?



Mediated by allostery?
Features of response?
Equivalence to serum?

[1] Koefoed 2011 *mAbs*. [2] Yewdell 1986 *J Virol*. [3] Hensley 2009 *Science*. [4] Chow 2013 *Cell Host Microbe*



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Mechanisms of Synergy

