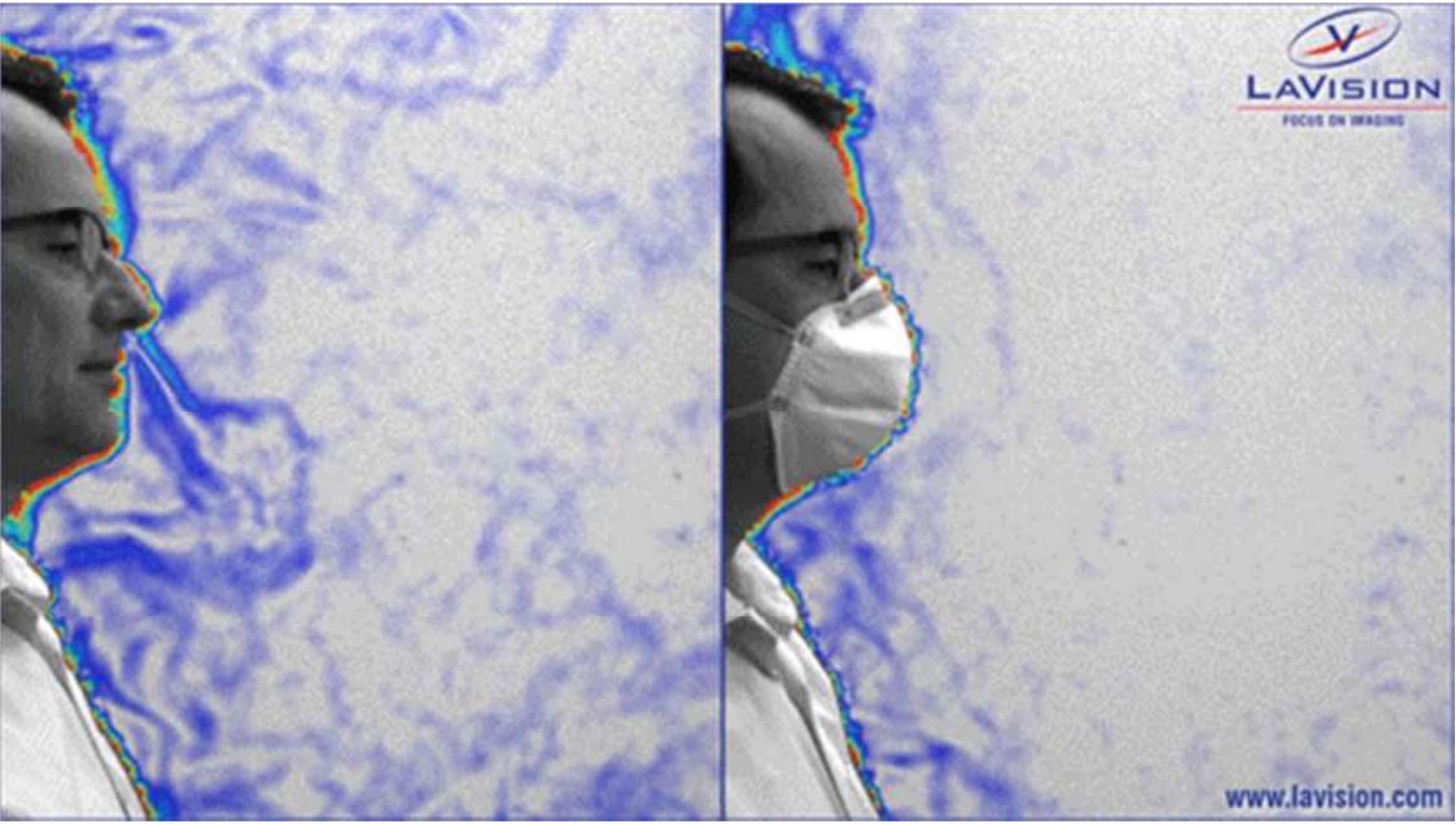
Masks, Air, Droplets and Pathogens

Simple Models / Heuristics

MISG 2021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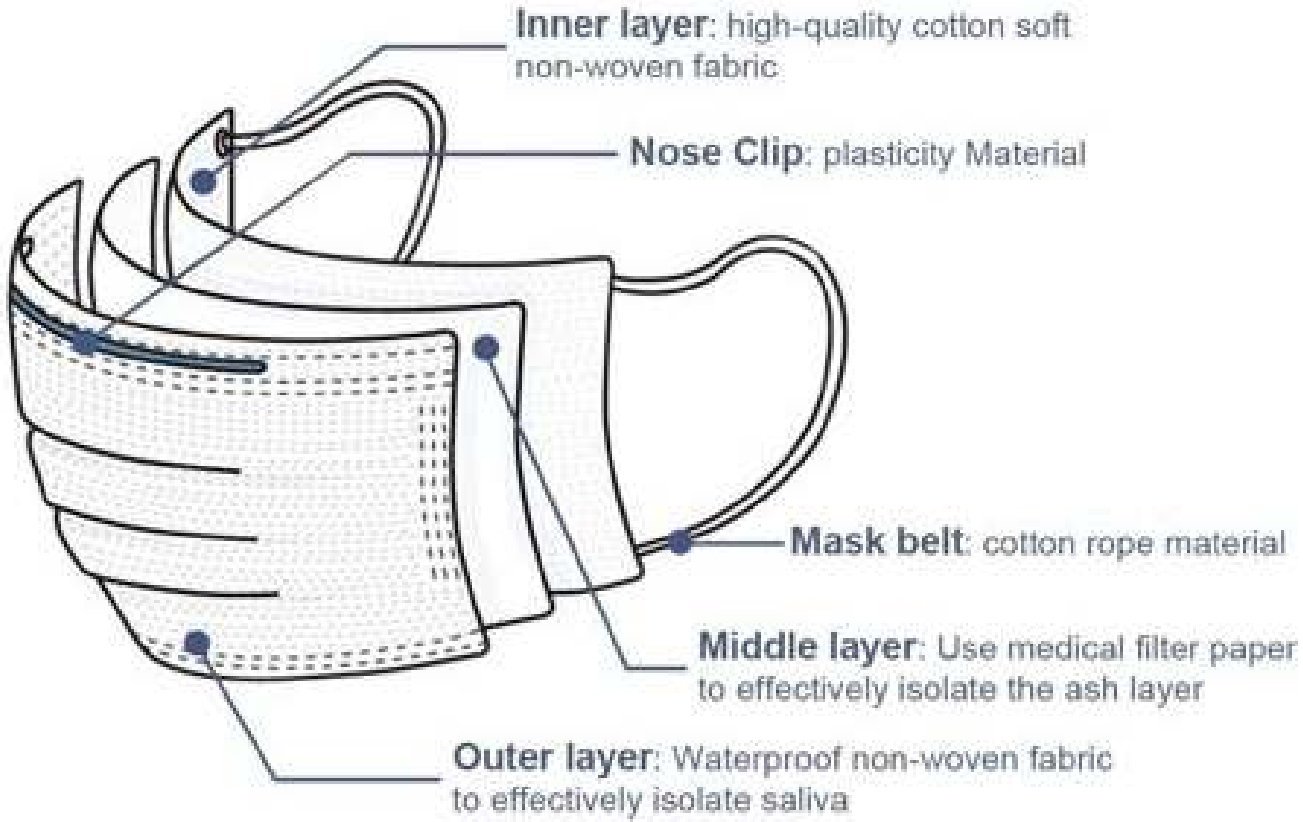


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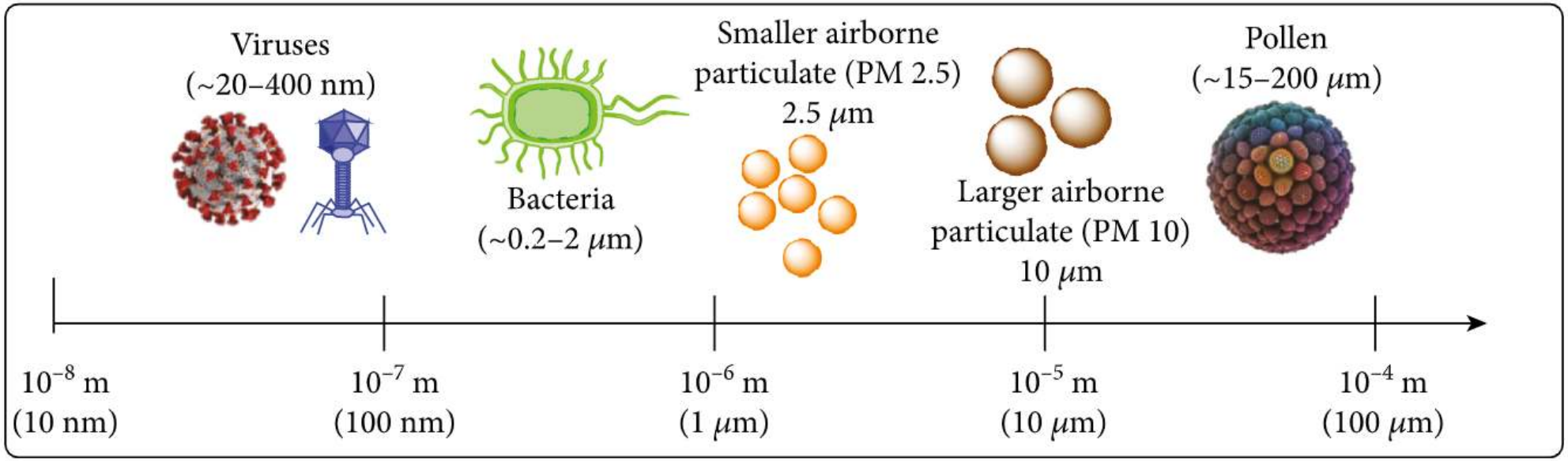
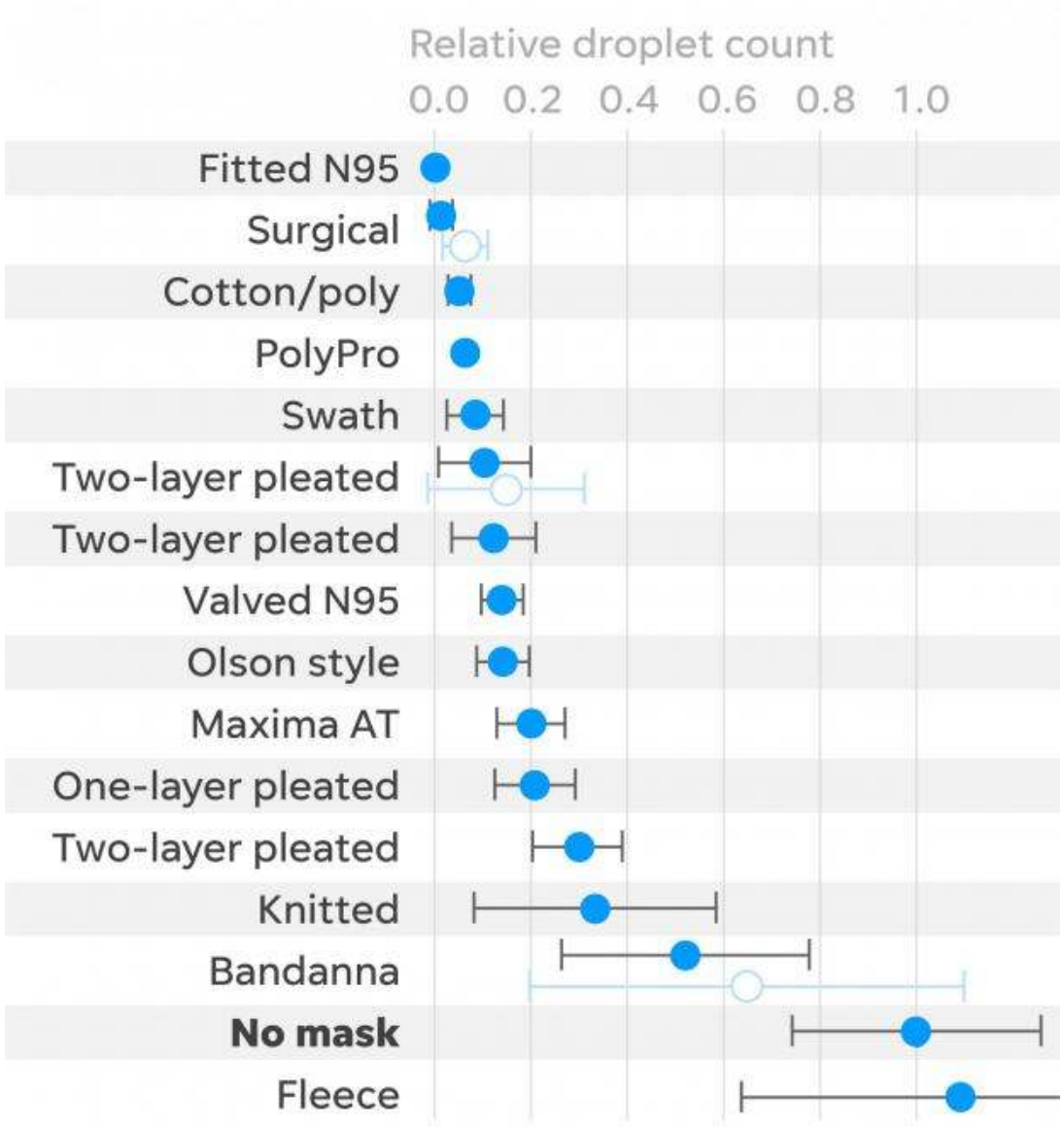
Figure 1

Relative size chart of common airborne contaminants and pathogens.

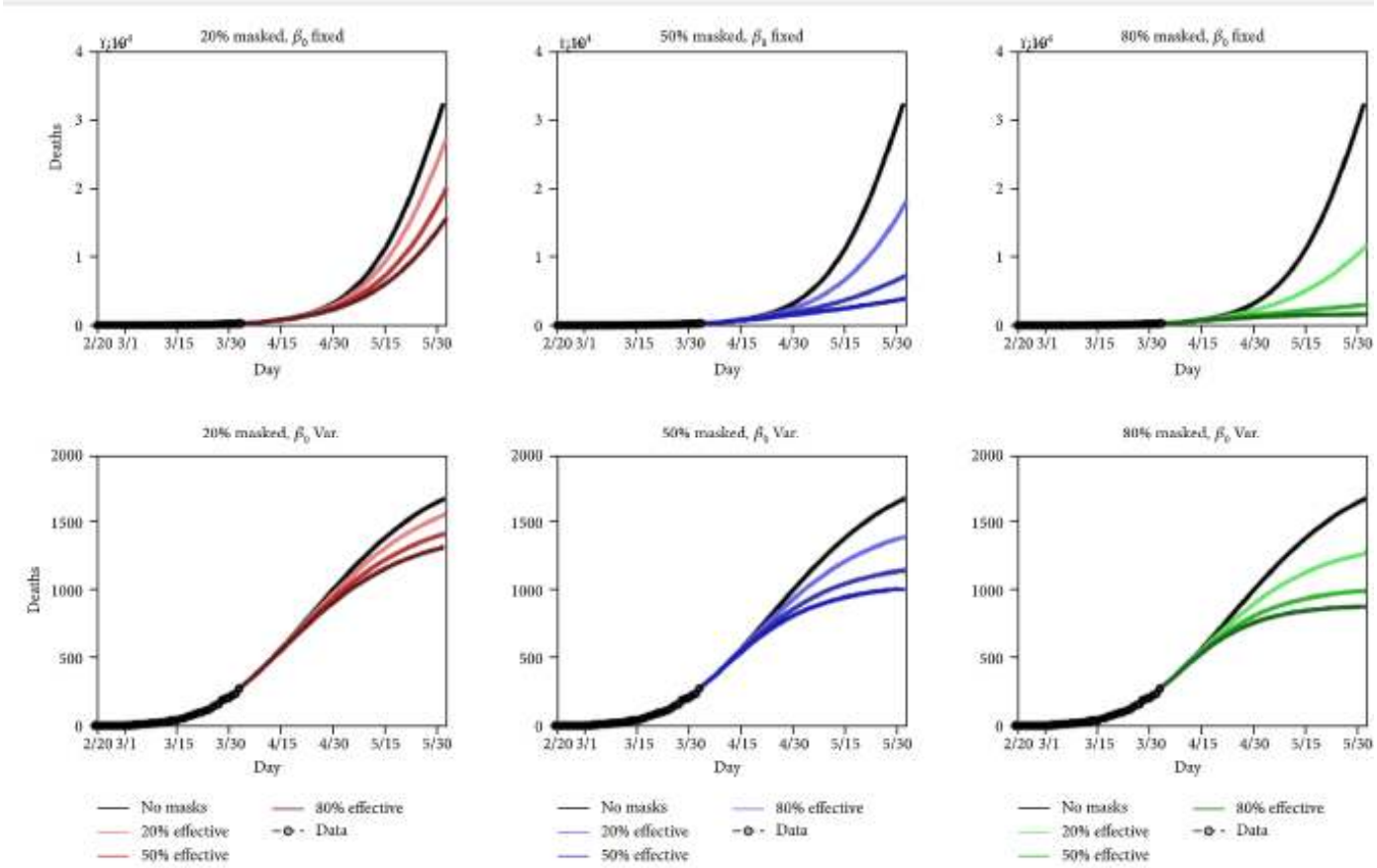


https://doi.org/10.34133/2020/7286735



NOTE Results are normalized to the control trial (no mask)

Simulated future (cumulative) death tolls for Washington state, using either a fixed (top panels) or variable (bottom panels) transmission rate, , and nine different permutations of general public mask coverage and effectiveness. The
-axes are scaled differently in the top and bottom panels. Reproduced with permission from Ref. [18]. Copyright 2020, Elsevier B.V. on behalf of KeAi Communications Co., Ltd.



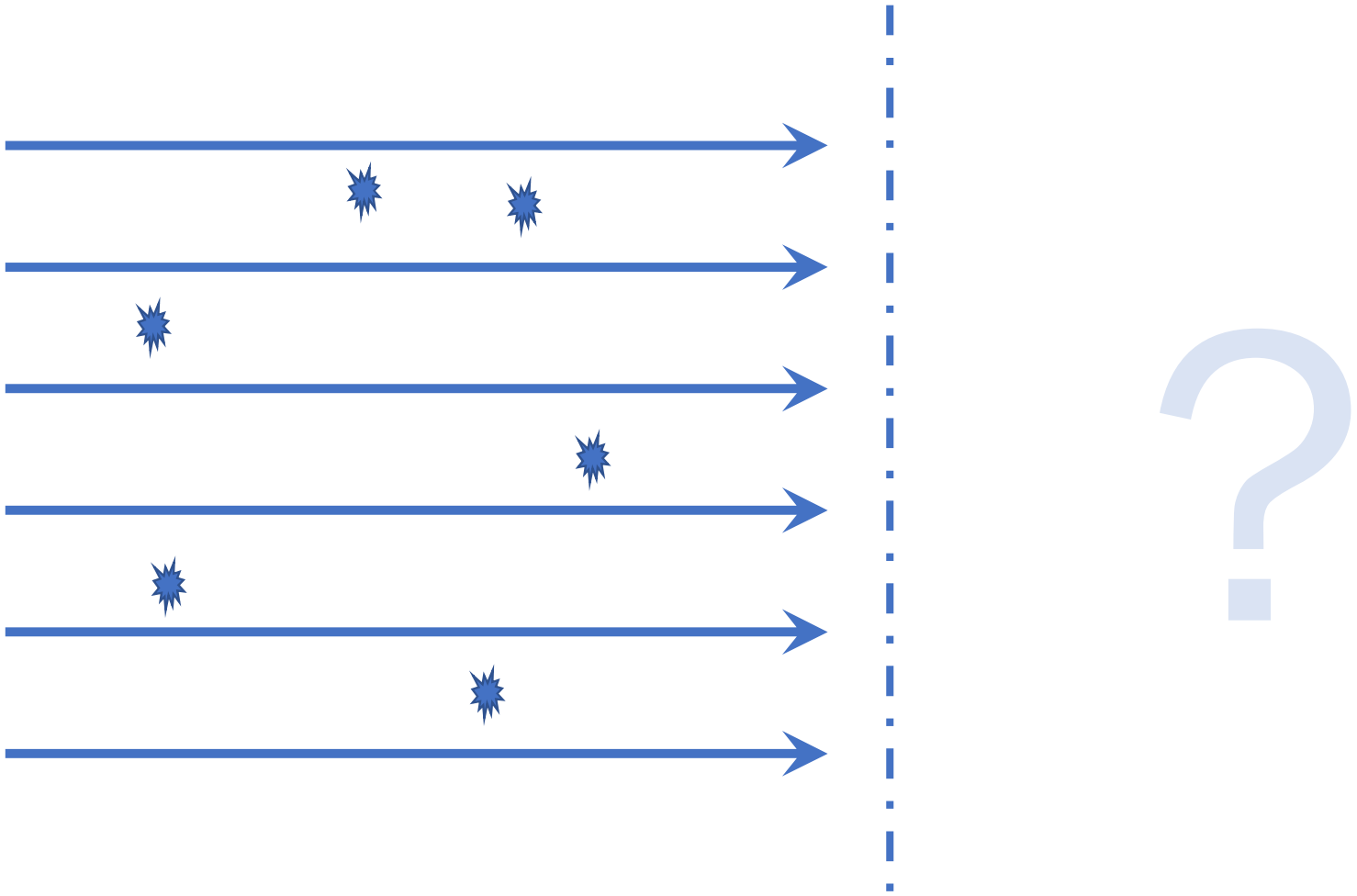
There are lots of consequential questions about masks

- How well they protect the wearer
- How well they protect others
- What they block/absorb
- What they divert
- How different designs vary
- How best to wear them
- How often to clean them
- How hard to push for their use
- How much to invest in their use
- What impact they have

Talking about masks is complicated

- Emotive triggers
- Political opportunism
- Complexity of airflow
- Diversity of particles / droplets
- Diversity/complexity of contexts

Scaling/Emergent Parameters/Heuristics?



It just makes common sense that it likely would be more effective.'

— Anthony Fauci, the director of the National Institute of Allergy and Infectious Diseases, on double masking

Amanda Gorman

US Youth Poet Laureate