

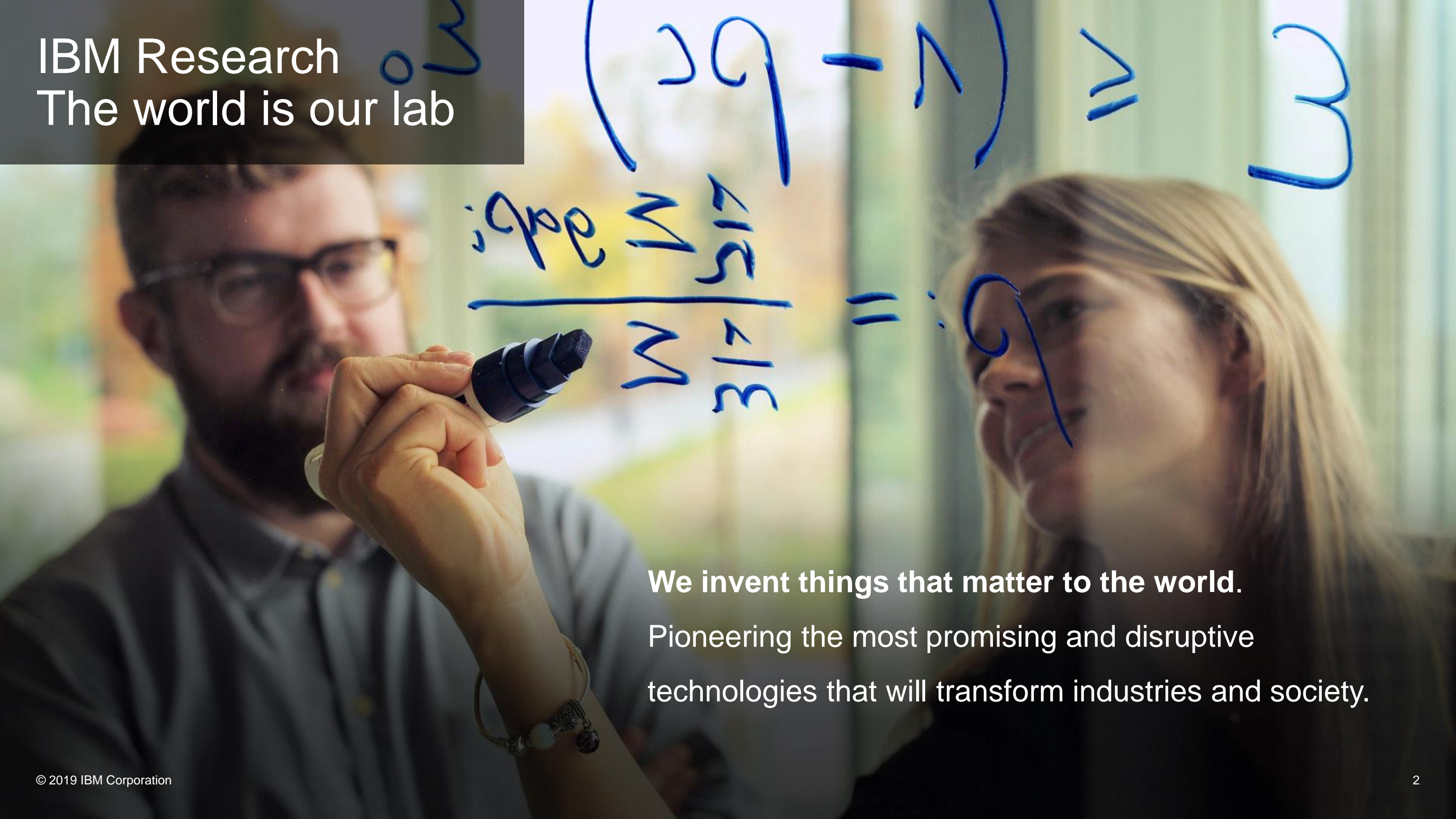
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The world is our lab

—
Sekou L. Remy

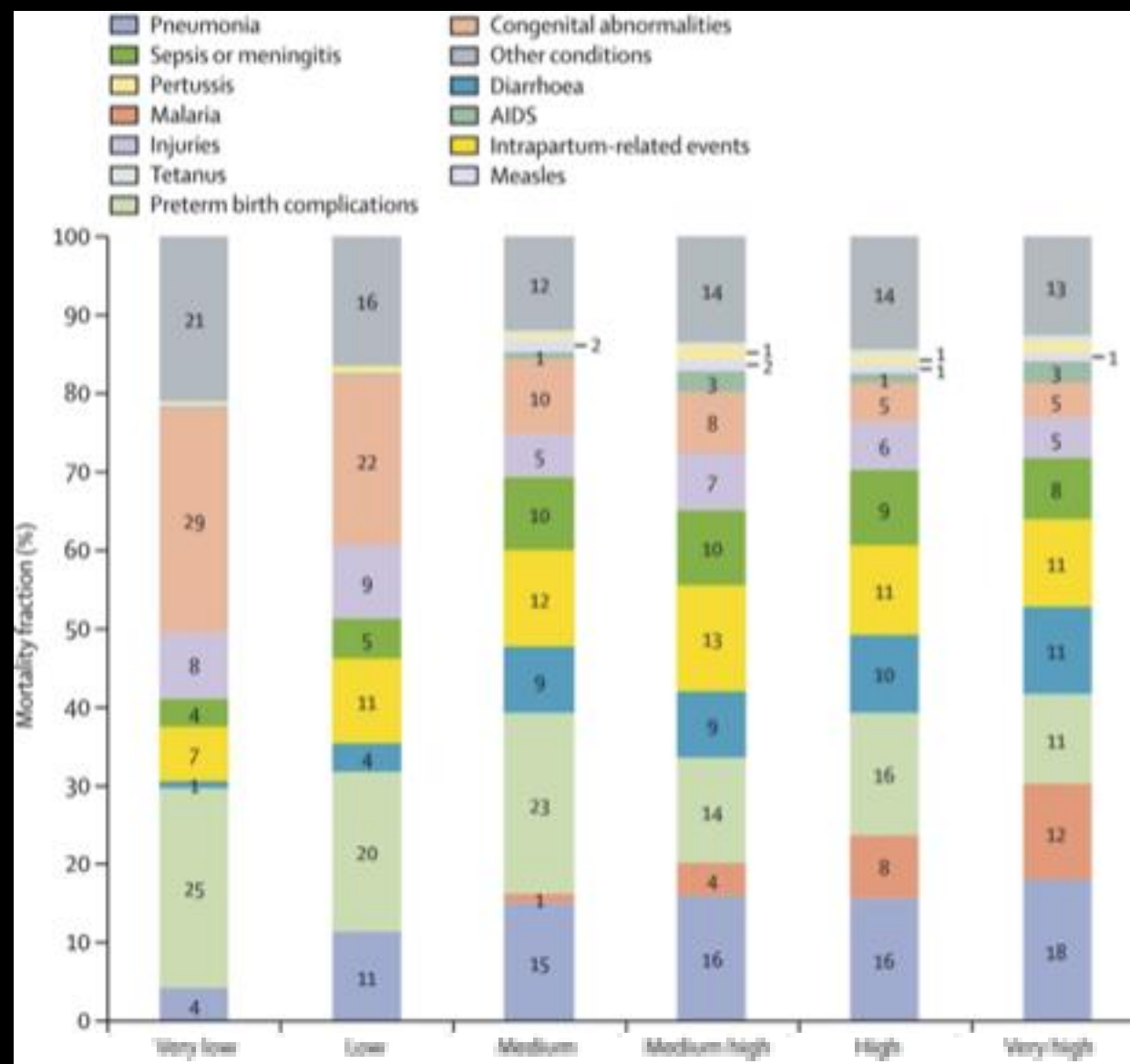
Overview on what we're doing in Malaria

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We invent things that matter to the world.
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technologies that will transform industries and society.

Malaria

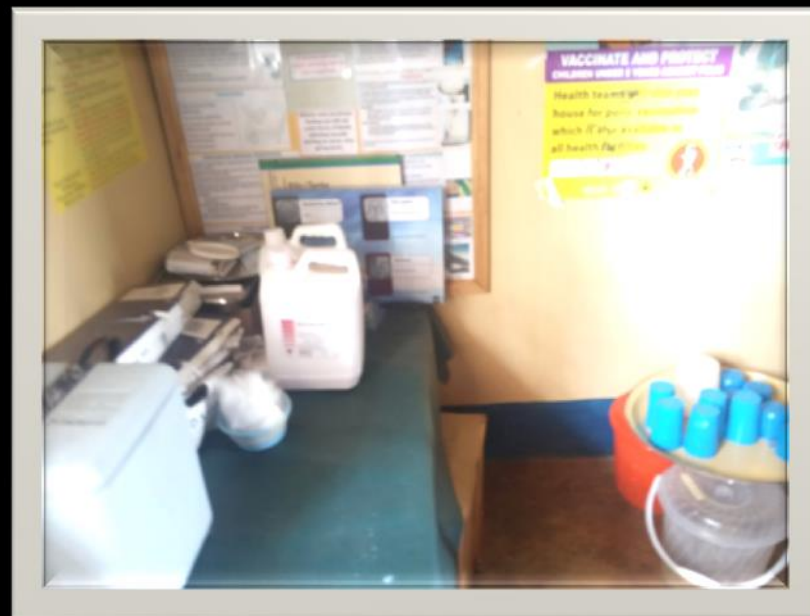


... a preventable disease...
is the **leading cause** of morbidity and mortality in countries like Mali and Sierra Leone...

Figure 3 Cause-of-death mortality fractions (A)
The Lancet: [http://dx.doi.org/10.1016/S0140-6736\(16\)31593-8](http://dx.doi.org/10.1016/S0140-6736(16)31593-8)

<https://www.measureevaluation.org/resources/newsroom/news/controlling-malaria-in-mali>

Malaria Control

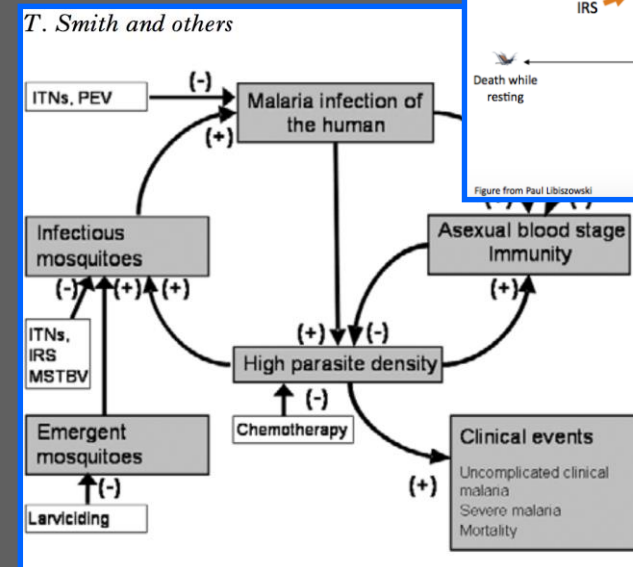
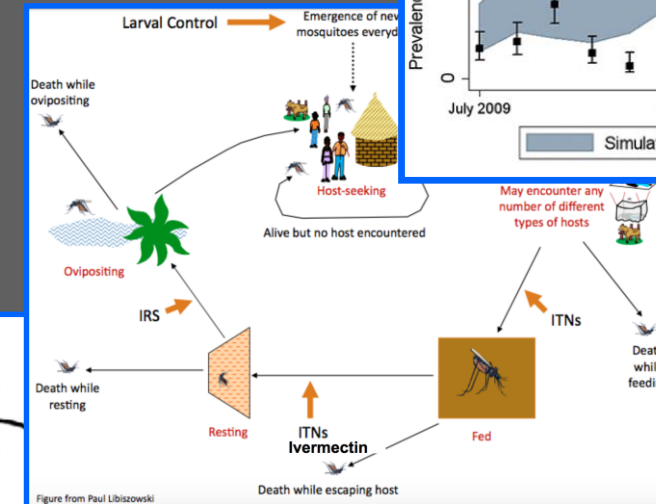
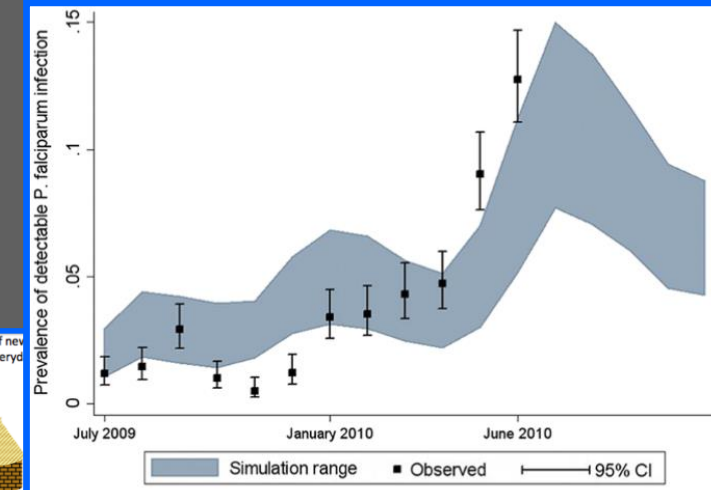


Many options, and combinations of options are possible!

Supporting Decisions with ML

O. Bent, et. al. *Novel exploration techniques (NETs) for malaria policy interventions*. In Thirty-Second AAAI Conference on Artificial Intelligence (IAAI 2018)

S.L. Remy, et. al. *Reshaping the use of digital tools to fight malaria*. Multilateral Initiative on Malaria - Workshop on Using Digital Tools to Strengthen the Malaria Supply Chain (MIM 2018)



Smith, T., et al., 2008. Towards a comprehensive simulation model of malaria epidemiology and control. *Parasitology*, 135(13), pp.1507-1516. <https://doi.org/10.1017/S0031182008000371>

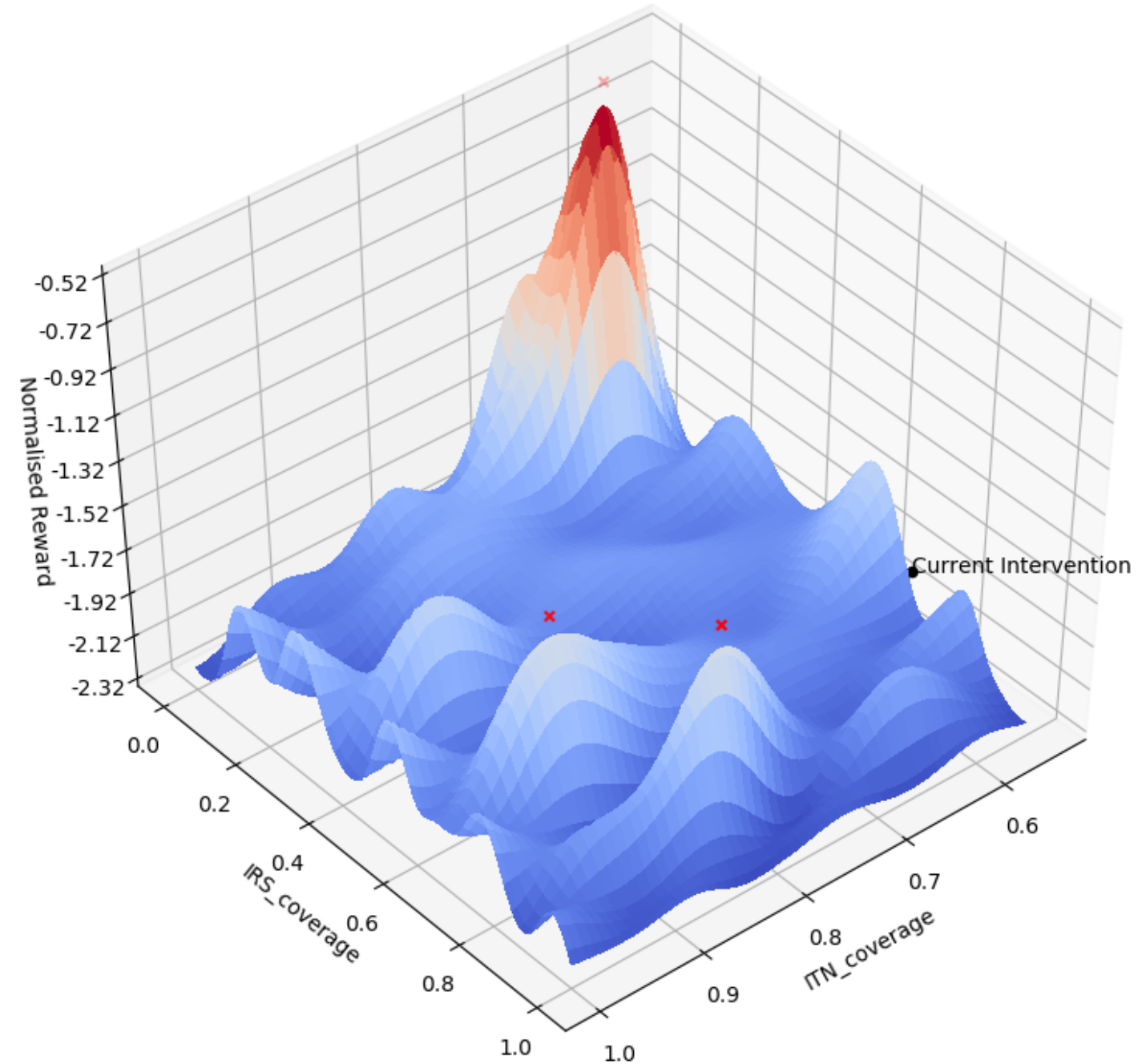
Libiszowski et. al., *Bioinformatic and Public Health Research Databases, Collaborative Environments, and Virtual Organizations* <https://www3.nd.edu/~gmadey/Activities/BiocomplexityWorkshop2008.pdf>

Stuckey et al, 2012. Simulation of malaria epidemiology and control in the highlands of western Kenya. *Malaria journal*, 11(1), p.357. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3552835/figure/F5/>

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Sharing Digital Resources

RK Raman, et. al. *Constructing and Compressing Frames in Blockchain-based Verifiable Multi-party Computation*. In IEEE International Conference on Acoustics, Speech and Signal Processing (ICASSP 2019)

N. Bore, et. al. *Promoting Distributed Trust in Machine Learning and Computational Simulation*. In IEEE International Conference on Blockchain and Cryptocurrency (ICBC 2019)

Data Models Compute
Results
Provenance

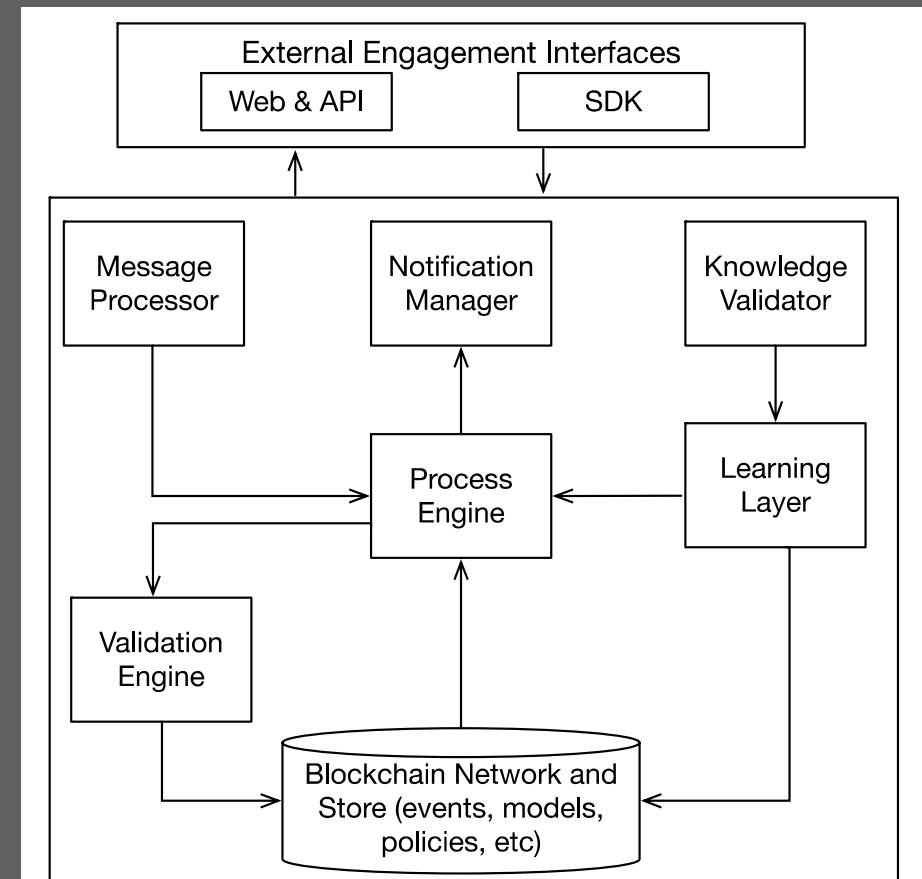


Figure 1. High-level view of the system components

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