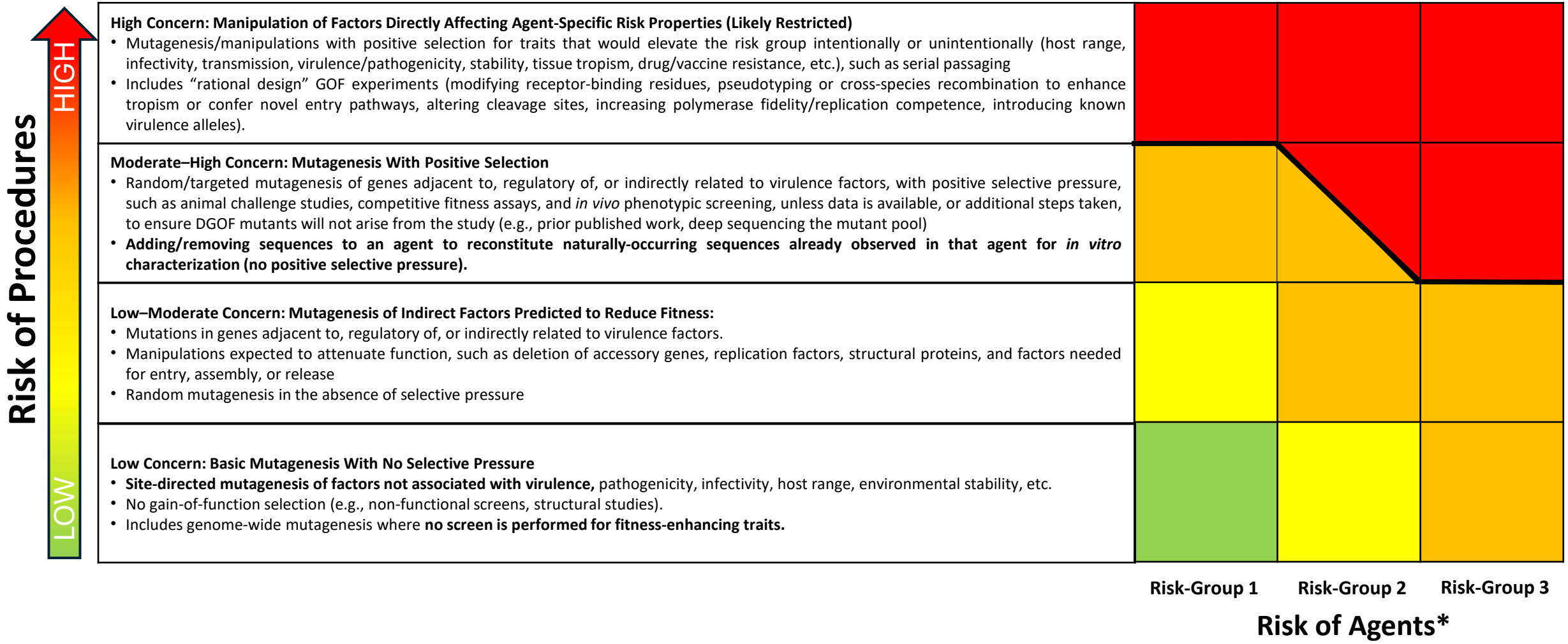
Matrix for Identifying Potential DGOF Research



RISK ASSESSMENT: The closer a study comes to the "red zone" of dangerous gain-of-function, the greater the expectation for investigators to be proactive and have a transparent discussion of risk mitigation measures. Investigators should cite relevant literature supporting the plausibility of minimal harm and clearly describe experimental strategies used to avoid the generation or enrichment of DGOF mutants.

***AGENT-BASED RISK:** Rather than risk group, more emphasis should be on the mutational distance from a dangerous phenotype (RG1<RG2<RG3), combined with the potential for acquiring mutations (e.g., mutational frequency among viruses: dsDNA viruses<ssDNA viruses<retroviruses<dsRNA viruses<ssRNA viruses)



Executive Order

Sec. 8. Definitions. For the purposes of this order,
"dangerous gain-of-function research" means scientific research on an infectious agent or toxin with the potential to cause disease by enhancing its pathogenicity or increasing its transmissibility. Covered research activities are those that could result in significant societal consequences and that seek or achieve one or more of the following outcomes:

a. enhancing the harmful consequences of the agent or toxin;
b. disrupting beneficial immunological response or the effectiveness of an immunization against the agent or toxin;
c. conferring to the agent or toxin resistance to clinically or agriculturally useful prophylactic or therapeutic interventions against that agent or toxin or facilitating their ability to evade detection methodologies;
d. increasing the stability, transmissibility, or the ability to disseminate the agent or toxin;
e. altering the host range or tropism of the agent or toxin;
f. enhancing the susceptibility of a human host population to the agent or toxin; or
g. generating or reconstituting an eradicated or extinct agent or toxin.