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Fungal vaccines have long been a goal in the fields of immunology and microbiology to counter the high mortality and morbidity rates owing to fungal diseases, particularly in immunocompromised patients. However, the design of effective vaccination formulations for durable protection to the different fungi has lagged behind due to the important differences among fungi and their biology and our limited understanding of the complex host–pathogen interactions and immune responses. Overcoming these challenges is expected to contribute to improved vaccination strategies aimed at personalized efficacy across distinct target patient populations. This likely requires the integration of multifaceted approaches encompassing advanced immunology, systems biology, immunogenetics, and bioinformatics in the fields of fungal and host biology and their