

[REDACTED] [REDACTED] [REDACTED] [REDACTED]

14 January 20 [REDACTED]

Scientific Review Committee  
The Gilead Sciences Research Scholars Program in HIV

To Whom It May Concern:

I am writing to strongly recommend Dr. [REDACTED] for the Gilead Sciences Research Scholars Program in HIV. [REDACTED] is an outstanding molecular biologist who has already made impressive contributions to our understanding of virus-host protein interactions using quantitative system approaches. Significantly, [REDACTED] is an innovator in developing [REDACTED] strategies to engineer the [REDACTED] in primary human cells. By leveraging this powerful method to define the role of host factors in latently infected primary T cells and systematically define the interaction between the virus and its [REDACTED], [REDACTED] will gain unprecedented mechanistic insights into the host cell factors involved in HIV replication and persistence.

My laboratory has a long-standing interest in elucidating the nature and extent of HIV genetic variation, the biological and evolutionary processes that have produced the observed patterns, and the human genes and their relevant genetic variants that contribute to virus evolution. We were the first to describe: the transmission of selected viral variants and changes in glycosylation patterns of their envelope proteins that attended transmission; viral and host immune dynamics as determinants of the trajectory of HIV adaptation within individual hosts; when and where the AIDS pandemic had its origin in west central Africa; the essential role that genetic variants play a role in protecting some people from HIV infection or disease progression; and that there is ongoing virus replication in sanctuaries that give the virus safe haven from antiretroviral drugs or immune attack. The results of our studies are described in more than 200 publications in the peer-reviewed literature and our work has been/is supported by numerous grants from the National Institutes of Health.

Throughout my career, I had the opportunity to lead several multi-disciplinary research initiatives that have provided training opportunities for early-stage investigators, like [REDACTED]. Individual mentees have included [REDACTED] and [REDACTED] Institute, [REDACTED] of the [REDACTED] Center, and [REDACTED] of University of [REDACTED] among others, who are all now highly competitive for NIH and non-profit foundation grant support. [REDACTED] and I will develop a mentoring plan that has short- and long-term career objectives including the development activities he will need to reach them. The planning process will serve to facilitate communication between us and will be periodically reviewed and updated to keep the project on track. While we will meet formally twice a month, our labs are located immediately adjacent to one another, facilitating regular, informal interactions between us and our lab members.

As Director for [REDACTED], I will ensure that support and commitment to the goals of the proposed research include access to laboratory facilities and equipment for [REDACTED] profiling for the

identification of cell-specific [REDACTED] mediated perturbations. This includes access to and training opportunities in the computational/biostatistical analysis of these datasets. The support of Dr. [REDACTED] at [REDACTED] will help ensure access to and feedback on the latest [REDACTED] research and technology. The [REDACTED] also hosts two other HIV researchers, Dr. [REDACTED] and Dr. [REDACTED], making the floor an ideal environment for a young HIV investigator. The Third Coast Center for AIDS Research (CFAR) is an additional resource for [REDACTED] to leverage, providing an excellent platform to meet other HIV researchers in the [REDACTED] area and to present his ongoing studies. Finally, the overall scientific environment and the ongoing commitments from [REDACTED] and the [REDACTED] will provide the stability and guiding mission to ensure that we will be able to support the research and [REDACTED]'s career growth during the duration of the award.

The laboratory space itself contains all of the facilities and equipment necessary to complete the research objectives, including [REDACTED] space for the handling of human tissues and infectious agents. All of the major equipment required for standard molecular biology, mammalian tissue culture, and the specific aims of this grant are readily available. This equipment includes: a BioRad ddSeq Single-cell sequencing system; a 10x Genomics single-cell sequencing system; an Illumina HiSeq4000 and Illumina MiSeq platforms for deep sequencing; a sixteen-color, four-laser benchtop Attune NxT flow cytometer; and an Amaxa 4D Nucleofection system. For computational support, we have a bespoke cloud-like, high-performance scalable computing environment designed to enhance data signal processing and analysis. Each component can be readily accessed through a high-speed intranet network and is pre-loaded with both signal processing software and post-processing software, thus enabling efficient utilization, reduction of wait time and untethering of equipment.

The [REDACTED] have a tremendous impact on the HIV field with the potential to transform our understanding of HIV biology. I have no doubt that [REDACTED] will succeed with these studies. He is a skilled and accomplished molecular biologist with the skills, trajectory, and personality to have a truly exceptional career in HIV research. I am thrilled to have [REDACTED] and look forward to working with him as a mentor and colleague.

Sincerely yours,

[REDACTED]