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(zoom) Research Funding in Cosmic Frontier and throughout HEP

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Dear P5 members,

The last decade has seen tremendous progress in Cosmic Frontier research, including significant advances in measuring the properties of Dark Energy, several orders of magnitude increase in sensitivity to Dark Matter over a variety of different mass scales, compelling arguments for the existence of new physics beyond the Standard Model, and a strong record of delivery on projects and physics. Research funding, and university groups in particular, are crucial for delivering these advances, providing ideas for new experiments and much of the workforce to carry them out and deliver the science.

We are writing to highlight that university scientific research support for all frontiers but particularly the Cosmic Frontier is hitting a dangerously low level. For example, the expected level today for new faculty in the Cosmic Frontier is to asymptote at a level of 1 postdoc and 1 graduate student, and that is only after several rounds of positive reviews ([link](#)). This level of PI funding makes it difficult to fulfill our goals of either contributing significantly to the design and construction of new instruments or delivering great results during the science-exploitation phase of experiments. The new norm prevents the development of critical science capabilities, limits diversity within groups, and hampers continuity of experience/training. Limited support for scientific travel restricts an important component of the training of young scientists. We will not retain the students and postdocs critical to our science.

As things stand currently, most faculty are forced to go outside the base grant for additional piecemeal resources to maintain a viable group, leading to more time spent writing (and more often than not failing to obtain) grants, less time for mentoring young scientists, and an overall distraction from the core scientific missions of the funding agencies. New initiatives such as Quantum Science and efforts in Artificial Intelligence and Machine Learning are welcome, but cannot replace adequate base research funding.

We ask that P5 carry forward the recommendations of previous panels such as the 2014 P5 and the 2020 Committee of Visitors in raising the issue of research support for labs and universities across HEP, and Cosmic Frontier in particular, with the agencies at every level possible, and with as much data as can be gathered. New physics is out there to be discovered but it will not happen without appropriate investment.

Thank you for your attention.

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Session Classification: Open Session for Remarks and Discussions