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**Panofsky Prize Talk: The High Resolution Fly's Eye (HiRes) Experiment**

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The High Resolution Fly's Eye (HiRes) experiment was the second-generation air fluorescence experiment proposed, built, and run by the HiRes collaboration, with members from the University of Utah, Columbia University, the University of Illinois, the University of New Mexico, Rutgers University, the University of Tokyo and the Los Alamos National Laboratory. I will report on the history of the project, the technical capabilities of the instrument built in the Utah desert and the physics results, culminating in the discovery of the Greisen-Zatsepin-Kuzmin cut-off. The HiRes experiment also pioneered many of the calibration and atmospheric monitoring techniques now in use by the Pierre Auger experiment and the Telescope Array experiment and I will describe a number of them in my talk.