

### Progress in Imaging Analysis of Sediment Particle Size Distribution



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Very little mass required to achieve excellent precision:





Can we improve the optics and lighting to measure size down to 2um? (FISP Grant)



Childers' Consulting



#### Direct Comparison of Light Sources

White LED





Improvements: Contrast, Brightness, Focus



#### Increased depth of field possible with blue light

Blue LED with reduced aperture

Blue LED



Improvements: Contrast, Brightness, Focus, Depth of Field



Can background grayscale signal be used to measure concentration of particles too small to resolve?





Next Steps:

- Evaluate cameras with greater grayscale sensitivity
- Assess linearity of grayscale response using known concentrations of reference materials
- Improve the loss in light
- Use red LED for background grayscale measurements