



GOODS: Great Observatories  
Origins Deep Survey

# Discuss among yourselves

## Where do we go from here?

### Observational challenges at high redshift:

- Are the *most* massive galaxies enough to really understand evolution? Probably not - we need a complete census with some dynamic range in mass at all  $z$ .
- Need to go ridiculously faint, even for imaging! IEROs:  $\langle K_{\text{vega}} \rangle = 22$ ,  $z_{850} > 26$
- Spectroscopy: only scratching the surface. What options do we have? Must this wait for JWST +  $\geq 20\text{m}$  telescopes?
- Are our surveys adequate for the most massive galaxies? (We need equivalent to SDSS LRG volumes at  $z > 1$ .)
- Missing so far: cold gas at high  $z$  (except via DLAs - never mentioned here)

### Connecting populations across redshifts:

- Clustering? Kinematics? Metallicity? Stellar populations?
- Are any of these individually convincing, or are all required?

### Theoretical challenges mostly concern gas supply and regulating star formation

- What regulates star formation? What turns it off? How does color bimodality come about? Time

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Massive Galaxies through Cosmic

Time