

# Sci/Tech Workforce Development



***Webb has over 1200 skilled scientists, engineers and technicians ... (engaged in)... Assembly and testing of the mirror and instruments ... at NASA Goddard.***  
<https://jwst.nasa.gov/people.html>

- NASA APRA/SAT programs supports ~ 240 grants steady-state
  - (radio, sub-mm, IR, visible, UV, X-ray, gamma-ray, particle, and fundamental physics)
- Steady-state cost is ~ \$120 M yr<sup>-1</sup> including balloon infrastructure (~9% Astro budget)
- Each grant yields ~ 1 PhD every 4 years
- Over 20 years yield is 1200 PhDs
- Close to the JWST build time and workforce requirement.
- If NASA tripled APRA/SAT they would have the sci/tech workforce do three flagships in 20 years (not likely)
- Or shorten the development time for doing one
- Other sources of workforce are Pioneers and Explorers to carryout precursor science and tech dev
- Resulting archives will be important to widening community participation
- The community needs to pursue all these opportunities to create the workforce to carryout IOU-ST.