

# NWNH page 154: Technology Development

**“Technology development is the engine powering advances in astronomy and astrophysics, from vastly extending the scientific reach of existing facilities, to opening up new windows on the universe.** All of the PPPs emphasize the critical importance of technology development and each stresses the urgent need to augment the existing funding levels to realize their programs.”

“Technology development can be usefully divided into three categories:

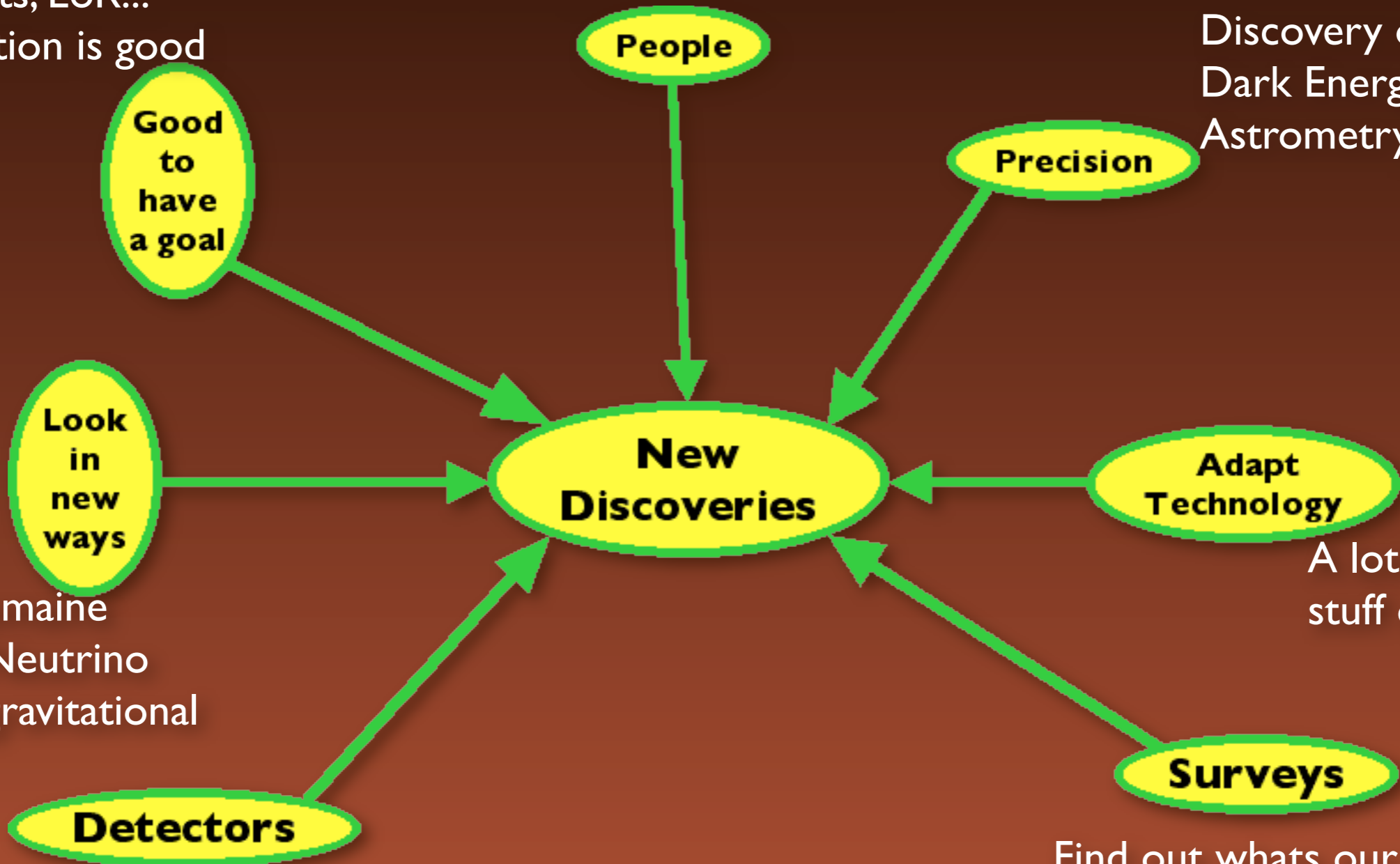
1. Near-term mission-specific technology development is directed toward the requirements of a specific mission.
2. Mid-term or “general” technology development is aimed at maturing the technical building blocks (detectors, optics, etc.) that will enable high-priority science to be done on future missions with low risk and predictable cost.
3. Long-term or “blue sky” development which supports development of novel ideas that could provide transformational improvements in capability and enable missions not yet dreamed of is crucial to the future...”

Enthusiastic and talented people.  
Support people. Encourage risk taking, allow mistakes...

e.g., CMB B-modes,  
Gravitational waves,  
Exoplanets, EoR...  
Competition is good

Discovery of CMB,  
Dark Energy,  
Astrometry...

e.g., Time domain  
astronomy, Neutrino  
astronomy, gravitational  
waves,



**Good to have a goal**

**People**

**Precision**

**Adapt Technology**

**Look in new ways**

**New Discoveries**

A lot of amazing stuff out there!

**Detectors**

**Surveys**

Build detectors to do what you want.

My goal:

- 1) Single dish large FOV filled focal planes with multiband, dual-polarization continuum, or broad spectral coverage.
- 2) ultrawide interferometric correlation

Find out what's out there!  
Discover rare objects.

- 1) Breadth vs depth
- 2) large scale and small

## **Astro2010 Discovery areas:**

- Identification and characterization of nearby habitable exoplanets
- The epoch of reionization
- Gravitational wave astronomy
- Time-domain astronomy
- Astrometry