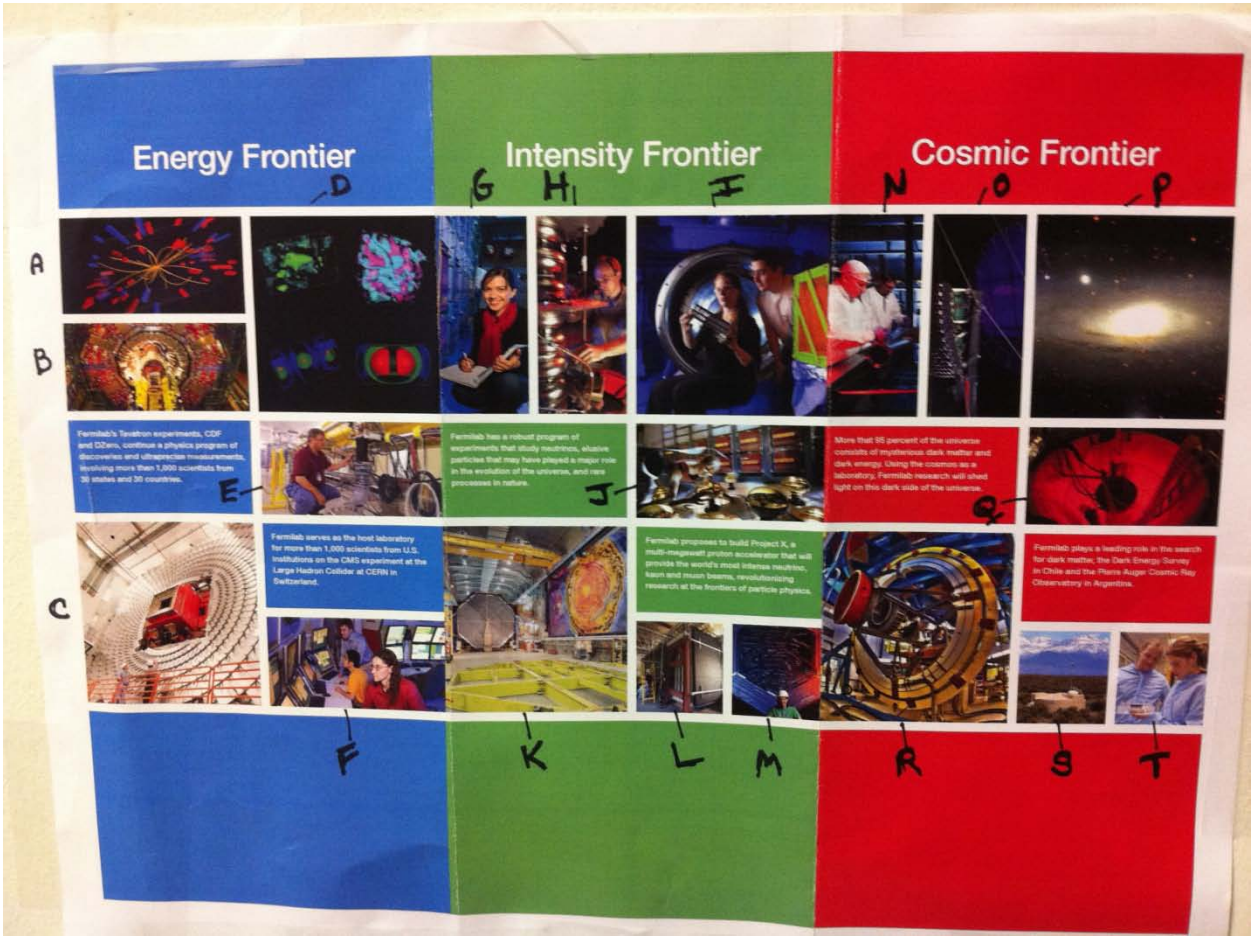
Tri-Panel Cheat Sheet



Energy Frontier

Label	Short desc.	Notes
A	CMS Event display	CMS experiment Event Display (CERN) http://www.uscms.org/ http://cms.fnal.gov/
B	LHC	Image of the Large Hadron Collider (CERN website) http://user.web.cern.ch/public/en/LHC/LHC-en.html http://lhc.web.cern.ch/lhc/
C	Dzero detector	"The energy, momentum, and electric charges of subatomic particles are measured by sub detectors wrapped around DZero's collision area like the layers of an onion." - *Frontiers of Discovery* brochure *http://www-d0.fnal.gov/* *http://www-d0.fnal.gov/public/*
D	LQCD visualizations	"Computer-generated visualizations of simulations of lattice QCD,

		or quantum chromodynamics, an important tool of particle physics theory. " - *Frontiers of Discovery* brochure http://usqcd.fnal.gov/ http://lqcd.fnal.gov/lqcd_cd.shtml
E	SCRF	Superconducting Radio Frequency Cavities: "Hundreds of cables coming out of the cryomodule will feed data from the SRF cavities to computers." - *Frontiers of Discovery* brochure http://ilc.fnal.gov/
F	CDF	"At the control room, members of the CDF collaboration from countries all around the world observe data from particle collisions 24 hours a day, seven days a week." - *Frontiers of Discovery* brochure http://www-cdf.fnal.gov/

Intensity Frontier

Label	Category	Description
G	MiniBooNE	"Georgia Karagiorgi, shown here in the MiniBooNE counting room, is one of 54 scientists working on the MiniBooNE experiment. In 2010, the collaboration announced anti-neutrino oscillation results that suggest that neutrinos and 18 antineutrinos behave differently." -- *Frontiers of Discovery* brochure http://www-boone.fnal.gov/
H	SCRF (07-0350-14D)	Superconducting Radio Frequency 9 cell cavity at vertical test stand for the ILC- Dimitri Sergatskov pictured. http://ilc.fnal.gov/
I	ArgoNeuT detector	ArgoNeut detector under construction at Proton Assembly building- Bonnie Fleming and Mitch Soderberg pictured. http://www.fnal.gov/pub/science/experiments/intensity/argoneut.html
J	Photomultiplier Tubes	Jasmine Ma inspects one of the phototubes that detects light from neutrino interactions. Image is of photomultiplier tubes used in the MiniBoone experiments. Photomultiplier tubes are an amplifying device that increases the effect of a single photon to levels that are measurable. http://quarknet.fnal.gov/projects/pmt/ http://www-boone.fnal.gov/
K	MINOS far Detector	MINOS far detector cavern in Soudan Iron Mine in Minnesota. http://www.fnal.gov/pub/presspass/press_releases/NuMI_photos/
L	NOvA Near Detector (11-0124-30D)	NOvA prototype Near Detector on surface http://www-nova.fnal.gov/nova_detectors.html http://www-nova.fnal.gov/nova_experiment_print.html
M	MINERvA Detector (10-0546)	Christian Pena pictured with MINERvA Detector http://minerva.fnal.gov/

Cosmic Frontier

Label	Category	Description
N	Holometer	Holographic Interferometer: "A twin set up of lasers shot through 40-meter-long vacuum cavities encased in metal will seek tiny, rapid fluctuations in the apparent speed of light when compared between different directions. Certain kinds of fluctuations could be due to jitter caused by the limited resolution of spacetime itself, or holographic noise." -- *Frontiers of Discovery* brochure *http://holometer.fnal.gov/*
O	Pierre Auger Fluorescence Telescope…	Fluorescence Telescope Camera and Aperture http://www.auger.org/technical_info/pdfs/icrc2005/icrc_2005_113.pdf
P	Sloan Digital Sky Survey	Galaxy image http://wvip2.fnal.gov/dr7/en/proj/basic/galaxies/spirals.asp
Q	COUPP	(The Chicagoland Observatory for Underground Particle Physics) "The ability to switch the type of liquid in the detector with minimal effort and cost gives the bubble chamber an advantage over other dark-matter detection devices." -- *Frontiers of Discovery* brochure http://www.fnal.gov/pub/science/experiments/cosmic/coupp.html
R	DES	(Dark Energy Survey) "The Dark Energy Camera will observe light from distant galaxies and stars. Its 2.2-degree field of view is so large that a single image will record data from an area of the sky 20 times the size of the moon as seen from Earth." -- *Frontiers of Discovery* brochure *http://www.darkenergysurvey.org/DECam/camera.shtml*
S	Pierre Auger	"One of 1,600 water tanks used in cosmic ray detection. Each detector operates on only 20 watts of solar power." -- *Frontiers of Discovery* brochure *http://www.auger.org/* http://www.fnal.gov/pub/science/experiments/cosmic/pierre-auger.html
T	DAMIC	(Dark matter in CCD's) "Fermilab physicist Juan Estrada and high school student Natalie Harrison, with DAMIC's single-chip detector. DAMIC saved $200,000 by using electronics and CCDs originally developed for the Dark Energy Camera. The heart of an ordinary digital camera uses the same technology, although not of the same quality." -- *Frontiers of Discovery* brochure *http://www-ppd.fnal.gov/MDOffice-w/Mech_Web/DocLink/DAMIC.htm*