Nuclear Physics at NSF

- Research and Education
  - 200+ faculty
  - 80+ postdocs
  - 200+ graduate students
  - 150+ undergraduates
- University facilities
  - MSU NSCL
  - Tandem/LINAC laboratories
    - FSU
    - Notre Dame
    - Stony Brook
- User group program: DOE/OS/NP is critical partner

Questions via NSAC

- **Quantum Chromodynamics:**
  - *What is the nature of the quark-gluon matter of the early universe and what transitions led to our present world of protons and neutrons?*
  - *Where is the glue that binds quarks into strongly interacting particles, and what are its properties?*
  - *What is the internal landscape of the proton?*
  - *What does QCD predict for the properties of nuclear matter?*
- **Nuclei and Nuclear Astrophysics:**
  - *What binds protons and neutrons into stable nuclei and rare isotopes?*
  - *What is the origin of simple patterns in complex nuclei?*
  - *When and how did the elements from iron to uranium originate?*
  - *What causes stars to explode?*
- **Standard Model:**
  - *What are the masses of neutrinos and how have they shaped the evolution of the universe?*
  - *Why is there more matter than antimatter?*
  - *What are the unseen forces that disappeared from view as the universe cooled?*

Nuclear Physics FY2006

- NSCL operations: 1% rescission
- Nuclear Astrophysics flat
- Nuclear Theory up 6%
  - 2:1 request ratio (5:1 in FY2005)
  - Trying to implement NSAC theory recommendations
- Nuclear Experiment up 2% (FY2005 was –7.5%)
  - Continuing Full evaluation of program grantees
- CAREER award
  - John Beacom (OSU)

People

- NSF Director: Arden Bement
- NSF Deputy Director: Kathie Olsen
- MPS Assistant Director: Michael Turner (to 3/30)
- Physics Division Director: Joe Dehmer
- Nuclear Physics (experiment):
  - BDK
  - Richard Boyd (and astro, underground lab)
  - Elizabeth Beise
- Nuclear Physics (theory): BDK