Mission Statement:
Over the last decade, budget pressures and a steep rise in the number of proposals have had an impact on researchers and funding agencies in the fields of Astronomy and Astrophysics. The decreasing success rate of individual proposals, a general decrease in funding levels in many agencies, and increased reviewer load has been a topic of concern within the community. Consequently, a working group has been formed under the auspices of AAAC, including representatives from CAS, CAA, AAS, and NAS, in consultation with representatives from the relevant divisions of NSF, DOE and NASA. Its purpose is to evaluate the effect of this changing environment on the health of the field, specifically addressing whether this will result in an unacceptable restrictions in the range of new scientific initiatives and negatively impact career choices of the most promising researchers. It is already creating an unsustainable load on reviewers and has led the agencies to consider solutions to the problem (such as reducing the frequency of solicitations or restricting the number of proposals per year). This working group will gather relevant demographic data in order to understand how the funding environment over the last 10 years has affected researchers and projects. Of particular concern is the balance between National Labs and Universities, and between individual researcher grants and large projects. We will compare funding models across agencies and determine appropriate metrics for evaluating success. This will allow us to provide data-driven projections of the impact of such trends in the future, as well as that of any proposed solutions.

Define the Problem

Defining the Problem should be high level. The data presented should consist of:
1. Funding available trends (plus some detail about proportions of projects and individual grants)
2. Success rate trends
3. Number of proposals submitted trends
4. Requested and awarded funds per proposal

The problem, and therefore its solution, depend on the agency funding policy and available budget.

DOE HEP budgets have been declining over the last decade. The proportion dedicated to research went from 30% to a high point of 58% in 2009 at the expense of projects, fueled by R&D for new projects. As new projects come online, P5 recommended that research be maintained at 40%. The success rates for HEP overall are _____ for university programs and have been relatively constant, but the proportion of funding per PI has gone down (need details). In 2012 the HEP University program was split into "Frontiers". The cosmic frontier comprises ~14% percent of the HEP budget. In the three years since these areas have been separate, the CF success rate for renewal is 100%, while it is 36%, compared to HEP overall of 85% (renewal) and 24% (new). *** these numbers are from 2014 – need data for 2015 and then do an average* ***. Since DOE is mission-driven, proposals are judged on their relevance to the DOE CF priorities. Thus, a more relevant statistic is that the funding per PI has gone from ___ to ___ for the University HEP program. The ratio of awarded to requested funding has dropped from ___ to ___. In the last 3 years

of the cosmic frontier, the same metric was ____. Over the course of the 3 years, it has not changed within statistics.

The budget for NASA Astrophysics has been slowly rising, yet the success rate has fallen from 30% in 2004 to approximately 18%?? as the number of proposals has doubled. The funding per proposal has gone up?? Down?? How much requested vs actually awarded.

At NSF, Astronomy has remained stable at 18% of the MPS budget. Money available for single investigator and midscale grants have increased by 60% since 2004, but are expected to shrink over the next 5 years as new projects (ALMA+DKIST+LSST) come online. The success rate in 1990 was 50%, but by 2004 it was 30% and has now dropped to 15%. This is mirrored by a doubling of proposals every decade from 1990. The average proposal cost has increased from 93k – 150k

Impact

List of institutions (or types) that received funds in 2004 and in 2014 (maybe just 2 timestamps). Answer the question: are more astronomers requesting funding from institutions that historically either have not sought or have not been awarded NASA funds.

So then we have to ask why: are we overproducing PhDs or are simply more astronomy PhDs staying in the field and living off soft money or working in programs that didn't exist or had a much lower research profile a decade ago?