

S & T For National Security

- **In 2008 DDR&E asked JASON to recommend how DoD Basic (6.1) research should be structured best to meet the future**
- **Tasking included looking at the program, people, and organization**
- **Steve Koonin directed the study**
- **JASON did not collect systematic data but talked with people at DDR&E and the services and read the Welch report.**
- **The report was based mostly on decades of experience of 25 JASONS with academia and DoD 6.1 research**

Rationale for DoD Basic Research

- **Some fields are unique to DoD**
- **Other fields yield benefits for wise DoD support**
- **Basic researchers are needed to identify & utilize
best foreign basic research**
- **Two fallacies**
 - **“Why invest when Net Present Value is so low?”**
 - **“Let someone else pay & we’ll reap the rewards.”**

Program Observations

- **Important program aspects are “broken”**
- **Significant basic (6.1) funding supports applied work, using DoD’s definitions**
- **Work is often good but yields only incremental advances**
- **Shift in emphasis done by the services, with no critical review or redirection by DDR&E**
- **Common management of 6.1 – 6.3 is bad practice**

Program Recommendations

- **Insure 6.1 activities conform to 6.1 definition**
- **Focus on people & areas, not projects**
- **Shift funding to 'core' programs from DRIs**
- **Eliminate large fluctuations in 6.1 funding**
- **Judge 6.1 program managers by quality and number of discoveries rather than solely by obvious 'transitions'**

Personnel Observations

- **People are paramount, but**
- **Within DoD**
 - **S&T is not a path to high rank in the services**
 - **Program managers lack time & incentive to keep current with some of the best science**
- **Within academia**
 - **DoD is losing contact with large fraction of the best scientists**
 - **DoD is not adequately developing S&T pipeline**
150 NDSEG vs 1000 NSF fellowships per year

Personnel Recommendations

- **Facilitate advanced S&T degrees for line officers & establish research corps in services**
- **DoD labs should have some researchers closely coupled to broader communities**
- **Better couple supported faculty to DoD problems**
- **Expand the new National Security Faculty Fellowship program**

Organization Observations

- **DoD is not effectively coordinating & overseeing basic research across the dept.**
 - **DDR&E is decoupled from the “cash flow” in formulating budgets & spending funds**
- **Increased bureaucracy has diverted program managers from scientific program oversight**
- **DoE labs have similar functions to DoD labs but keep a higher basic research profile**

Organization Recommendations

- **Continue services running 6.1 research, but protect 6.1 funds at OSD level**
- **Strengthen DDR&E oversight of 6.1**
 - **Line authority over service 6.1, including reviewing budget requests & reprogramming appropriated funds**
- **Create a 6.1 advisory committee reporting to the USDATL**