COV Preliminary Report on SciDAC-2

SciDAC is an EXCELLENT program
and the process resulted in an
impressive portfolio of activities
in spite of INTENSE time pressure

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COV Members

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COV Logistics

- Review held in Germantown offices
  July 17-18, 2007
- Presentations by
  - ASCR
  - BER
  - HEP
  - NP
  - FES
- Full support by Office personnel
- Full access to files

COV Interaction with OS

- Excellent presentations
- VERY candid conversations
- Excellent support on getting answers to questions and access to files
  - Examined over 25 jackets
  - 1 on 1 explanation of decisions
- Overwhelming amount of information provided

Outline

- RFP
- Review Process
- Selection Process
- Documentation
- Management
- Recommendations

RFP

- Very complex, very ambitious program
  - Multiple components, multiple offices (ASC,NSF)
  - Coordinating Committee
  - Little time *
  - Much tension
- Confusion over CETs, SAPs & Institutes *
- Very general review criteria *
  - Hurts community as well as reviewers
  - No mention of petascale computing

BUT it was released & community responded

* Indicates recommendation made

Review Process

- Letters of Intent *
- Confusion over CETs, SAPs, Institutes *
- Confusion over role of computing *
- 15 specialty panels, additional written reviews
  - Inconsistent quality and numbers
  - Spotty coverage of math/CS/computing *
- Cross-Cut panel - 133 proposals *
  - Based on abstracts and reviews
  - Complex down-select process
  - No information on performance of SciDAC-1 *
  - Seemed to have little impact on final decisions

Selection Process

- Complexity of program
  - Offices
  - Integration of math/CS
  - Budgets
- Many 1 on 1 discussions
  - Successfully resolved all but one award
  - All but one proposal contained an integrated math/CS component

Selection Process: Balance

- 30 Awards
  - 17 SA/SAPs; 9 CETs; 4 Institutes
  - 18 new (non-SciDAC-1) awards
  - 14 with university PIs
  - 14 with Lab PIs
    - 4 LBNL; 3 ORNL; 2 ANL; 2 LLNL; 1 LANL; 1 PNNL; 1 NREL
  - 1 NASA Ames PI
  - 1 Industry PI
- Outreach Center added at NERSC

Remarkable balance given all the constraints

Documentation

- Complete access, but complicated by distribution of jackets throughout offices *
- Random sample of ~25 awards and declinations across the program elements
- Significant inconsistency in jacket data *
  - Across offices and within offices
  - Analysis of decisions very spotty
    - Multiple office input
    - No analysis of Lab awards
    - Program manager discussions required
- Inconsistent communication with PIs on declined proposals *

Management of Awards

- Viewed as part of process
- Complexity, visibility and importance of program requires close scrutiny and external review *
  - Good stewardship
  - Facilitates change
  - Improves the product
  - Provides important information for future programs
- Staffing demands makes such review problematic *

Recommendations

- Realistic timeline that considers
  - Preparation of RFP that is a clear, concise statement of
    - goals and objectives,
    - review criteria,
    - selection process, and
    - competition requirements;
  - Selection of highly qualified panels with full coverage of the program;
  - Changes that may need to be made after proposals are received;
  - A selection period that allows for the negotiations among program offices;
  - Preparation of consistent, high quality selection and declination documentation;
  - Negotiation of awards.

Recommendations: RFP

- RFP should address the following:
  - Key goals such as petascale computing are included in the review criteria to help focus proposers and reviewers;
  - Partnerships are an integral part of applications so that it is clear how they are to be presented and judged;
  - The distinctions between CETs and Institutes are clear;
  - Training of graduate students should be a criterion for evaluating Institutes.
- Consider delaying CET and Institute competitions until after SAs have been selected.

Recommendations: Review

- Consider a more detailed letter of intent that could be used to discourage non-competitive proposals.
- Following review of the applications in similar technical areas, “computing” panel(s) should be convened to address high performance computing.
- Include a cross-cut panel to assess the overall breadth and effectiveness of the portfolio, but it must be organized so as to resolve issues of first cross-cut panel.
- Reviewers for future SciDAC competitions should be given access to reviews of existing efforts that are participating in the new competition.

Recommendations: Documentation

- Every jacket, both awards and declinations, with both lab and non-lab PIs, should have an analysis of the reviews that justifies the decision, particularly for an award chosen from equally fundable proposals by a single program director.
- Reviews should be sent to all PIs.
- ASCR should maintain a copy of the jacket, preferably electronic, for every award regardless of what office has the lead role.

Recommendations: Management

- ASCR should institute an annual peer review of the SAs, CETs and Institutes.
  - Reviews of the SAs should include relevant SAPs;
  - Reviews of the CETs and Institutes should include relevant SAs.
- Given the severe staffing issues in ASCR, consider using an independent contractor.

SciDAC-2 process produced an excellent program.

Recommendations made in the spirit of improving future versions.

On behalf of the COV

THANKS to the Office of Science !