



U.S. DEPARTMENT OF
ENERGY

OFFICE OF
SCIENCE

*Peer Review in the
DOE Office of Science*

All research funded at laboratories and universities, including facilities construction and operations, is awarded through a peer-reviewed, merit-based process.

- The Office of Science (SC) is executing a \$4.7B budget in fiscal year 2009.
- SC is a steward for 10 of 17 DOE national labs and operates more than 30 major scientific user facilities.
- Approximately 1/2 of the budget supports operations of the scientific user facilities and construction of new facilities; the other 1/2 supports research at the national laboratories and universities.
- About 1/3 of SC research funding goes to support grants at more than 300 colleges and universities nationwide.
- In FY 2009 SC is supporting ~24,000 faculty, postdoctoral researchers, graduate students, and undergraduates.
- ~20,000 users of scientific facilities a year
 - ~1/2 of the annual 20,000 facility users come from universities;
 - ~1/3 of the users come from DOE national laboratories;
 - the remaining come from industry, other agencies, and international entities.

DOE Financial Assistance Program (10 CFR 600)

- It is the policy of DOE that discretionary financial assistance be awarded through a merit-based selection process.
- Merit review means **a thorough, consistent, and objective examination of applications based on pre-established criteria by persons who are independent of those submitting the applications and who are knowledgeable in the field of endeavor for which support is requested.**
- Each program office must establish a merit review system covering the financial assistance programs it administers. Merit review of financial assistance applications is intended to be advisory and is not intended to replace the authority of the project/program official with responsibility for deciding whether an award will be made.

Office of Science Merit Review System (10 CFR 605)

- Program managers perform an initial evaluation of all applications to ensure that the required information is provided; the proposed effort is technically sound and feasible; and the effort is consistent with program funding priorities.
- For applications that pass the initial evaluation, program managers use peer review to evaluate them based on criteria specified in 10 CFR 605.

Peer review is the cornerstone of our work.

- *Funding decisions in the Office of Science are made based on peer review.*
- 10 CFR 600 and 10 CFR 605 apply to financial assistance (grants and cooperative agreements).
- However, the Office of Science generally applies 10 CFR 605 principles to the review of national laboratory work as well.*
 - National laboratory employees are contractors
 - Peer review is used for both research and facilities
- DOE reviews research and facility operations at least once every three years.
- User facilities allocate facility time based on peer review. The facility directors carry out these reviews.
- CPU time at our computational facilities is allocated based on peer review executed either by DOE or by facility directors.
- In a special process, construction is reviewed by DOE at regular intervals (sometimes every few months) by the Office of Project Assessment in concert with program offices.

*Hereafter in this presentation, the word *proposal* refers to either a national laboratory technical proposal or a financial assistance application.

Expert federal program managers are critical for high-quality peer review.

- Our federal program managers generally hold science doctorates and are experienced researchers.
- The Office of Science employs about 150 federal program managers, all stationed in Germantown, Maryland.
- Program managers stay current in their fields.
 - Have access to the Web of Science and full text articles of important journals
 - Host and attend workshops
 - Host regular meetings of Principal Investigators with invited speakers and attendees
 - Attend conferences (within travel budget allowance)
 - Converse with the leaders in the field frequently
 - Organize and attend peer review panels and site visits, where they listen to debate
- External experts from national laboratories and universities rotate and bring fresh perspectives.
- Program manager decisions are reviewed by committees of visitors at regular intervals.

The Office of Science selects reviewers on the basis of professional qualifications and expertise. (10 CFR 605)

- The Office of Science obtains about 10,000-12,000 reviews per year.
- Reviewers may be selected based on (a few examples):
 - Authors of papers references in the proposal
 - Cross-references from journal publication databases
 - Program manager professional contacts and personal knowledge of the field
 - Reviewer publication record and reputation
 - Pool of volunteers
 - No apparent conflict of interest
- Reviewers can come from around the world and from universities, national laboratories, government agencies, industries, nonprofits, etc.
- Diversity (of topic, type of institution, demographics, etc.) among reviewers selected for a given proposal or set of proposals is important.

Reviewers comply with conflict of interest rules and are asked to keep review information confidential. (10 CFR 605)

- **A person has a conflict of interest (COI) if reviewing**
 - a particular matter that would have a direct and predictable effect on any person, company or organization with which he/she has a relationship, financial or otherwise. The interests of a spouse; minor child; general partner; organization in which he/she serves as officer, director, trustee, general partner, or employee; and any person or organization with whom he/she is negotiating employment are attributed to the reviewer.
- **All reviewers agree that they will not participate in the review of any proposal with which they have a COI.**
- **Reviewers agree to disclose any COI's discovered during the course of the review process.**
- **An individual with a COI cannot participate in the review of a proposal involving a matter that would cause a reasonable person with knowledge of the relevant facts to question impartiality.**
- **During a review, if a reviewer learns of a COI, the reviewer is asked to stop the review and report it to the program manager.**
- **For federal employees, the COI statutes and regulations that apply in regular employment apply if one is a reviewer.**

Three or more reviews per proposal are obtained.

- The most important components of a review are the narrative responses to specified review criteria.
- Scoring or adjectival ratings not standardized and used at the discretion of the program manager.
- Reviewer identities and review contents are kept confidential.
- Review contents are released to the Principal Investigator at the time of award or declination. Information that reveals the identity of the reviewer or is inflammatory is redacted.

The review method varies according to need.

■ Mail Review

- Generally used for the open solicitation, when proposals arrive throughout the year.
- Reviews trickle in over time.
- Reviewers are generally given six weeks to return the review.
- Reviewer identity kept confidential.

■ Panel Review

- Generally used for targeted solicitations when many proposals arrive simultaneously
- Multiple panels of 10-15 people apiece convene in Washington D.C. and submit reviews; the total number of panelists at a given time can total in the hundreds.
- Each panelist provides his/her own input.
- Reviewer identity kept confidential.

■ Site Visit or “Reverse Site Visit”

- Generally used for large, group programs such as national laboratory efforts, large facility competitions, etc.
- Researchers make presentations to a site visit team.
- The site visit team may interact with and ask questions of the investigators.
- The site visit team members submit independent reviews to DOE.

Common review criteria are used. (10 CFR 605)

Scientific and/or technical merit of the project;

Appropriateness of the proposed method or approach;

Competency of applicant's personnel and adequacy of proposed resources;

Reasonableness and appropriateness of the proposed budget; and

Other appropriate factors, established and set forth in a notice of availability or in a specific solicitation.

For renewals, continuations, and supplementals, program managers also consider performance under current award.

Award selection is informed by peer review. (10 CFR 605)

- Merit review is advisory and does not replace the authority of the program manager or contracting officer.
- Recommendations for awards are based upon
 - the findings of the technical peer review
 - the importance and relevance to the Office of Science and program mission
 - the availability of funds
 - Other program policy factors, e.g., program balance
- Program managers recommend awards to the contracting officers, who make the final decisions.
 - All financial assistance contracting officers are located in Chicago.
 - Each national laboratory has a federal contracting officer on site.

Proposals are reviewed generally within 6 months and no longer than 12 months from the date of receipt.

Sample Review Time Line – Energy Frontier Research Centers

