

ASCR Program Response to the Report of the ASCAC Committee of Visitors Review of the Computer Science Program

Date of COV: July 10 – July 11, 2012

Date of Response: October 29, 2012

Program Point of Contact: Lucy Nowell

COV Recommendation	Program Response
1(a): Efficacy and quality of the processes used to solicit, review, recommend and document application and proposal actions:	
Continue to improve the online information management capabilities of the program (and related ASCR programs that incorporate computer science research) informed by an overall plan, and by best practices from other funding organizations such as NSF and NIH.	The Office of Science established a new Portfolio Analysis and Management System (PAMS) in FY12 to support program management activities. The system is being introduced in modules that increasingly address this recommendation.
Expand the information management capabilities to incorporate a reviewer database that records areas of expertise, quality of past reviews, responsiveness, and conflicts of interest, and a PI database that identifies previous successful and unsuccessful DOE proposals, links to research and project websites, and all currently active DOE-funded projects.	The PAMS system will incorporate these features. ASCR is working to include more project information on its web site. The Office of Science currently has an awards search that lists all active grants, cooperative agreements, and interagency agreements at http://science.energy.gov/funding-opportunities/award-search/ .

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1(a): Efficacy and quality of the processes used to solicit, review, recommend and document application and proposal actions (cont.):	
Explore possible mechanisms to relax the present, very stringent approach to excluding reviewers with potential conflicts of interest in order to achieve a better balance between external reviewers and reviewers familiar with DOE’s and ASCR’s mission.	ASCR Computer Science Program Managers will continue to seek the most qualified reviewers available while still complying with DOE guidance on conflict of interest. Addressing DOE and ASCR mission interests is a primary responsibility of our Program Managers.
Investigate the feasibility of providing a longer-term, more coherent schedule of solicitations, recognizing budget contingencies and ongoing research advances.	Developing such a schedule is part of our planning for the Exascale Computing Initiative. However, budget uncertainties and Continuing Resolutions often interfere.
Devise some new mechanism for funding the exploration of promising new ideas that might not conform to the planned research programs.	This is the function of unsolicited proposals and Early Career Research Program awards, some of which are funded nearly every year.

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1(b): Efficacy and quality of the processes used to monitor active awards, projects and programs:	
Computer science program managers should be encouraged to consider how new technologies and new media, including social environments and hubs, could be used to provide more efficient oversight.	Program Managers will continue to use all of the resources available to provide effective management and oversight of their portfolios.

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1(b): Efficacy and quality of the processes used to monitor active awards, projects and programs (cont.):	
Better metrics should be developed for evaluating the impact and future needs for workshops and other conferences.	Workshops are organized to facilitate a community dialogue with regard to potential technology developments during a period of rapid change. Conferences also foster collaboration among researchers within and across programs. ASCR aims to minimize the number of events and maximize the value of those that are held.

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2(a): Within the boundaries defined by DOE mission and available funding, comment on how the award process has affected the breadth and depth of portfolio elements:	
ASCR's CS program should maintain an appropriate balance between funding for the Exascale research program and the base CS research program at the DOE labs.	ASCR recognizes an ongoing tension with respect to portfolio balance across several dimensions and attempts to achieve an appropriate balance within and across programs. Program managers aim to fund excellent research that addresses mission requirements, based on a competitive process with external review of proposals. There is no set formula that provides funding to labs versus other applicants.

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2(a): Within the boundaries defined by DOE mission and available funding, comment on how the award process has affected the breadth and depth of portfolio elements:	
<p>More prominence should be given to research into energy-efficient computing, machine learning and data analytics in future solicitations since these topics are important more generally than just in the context of the Exascale initiative.</p>	<p>Energy-efficient computing is a major thrust of the Exascale Computing Initiative.</p> <p>Multiple solicitations are planned in the near-term to address challenges of data analytics. However, some of the ASCR funding in this area is in the Applied Mathematics and Next Generation Networking for Science programs.</p>

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<p>2(b): Within the boundaries defined by DOE missions and available funding, comment on how the award process has affected the degree to which the program is addressing the challenges of multi-core hybrid computing and peta-to-exascale scientific data management:</p>	
<p>Review panels should ideally contain a mix of external and DOE Laboratory researchers.</p>	<p>This is always a goal for panels, within the constraints of conflict-of-interest requirements.</p>
<p>In its scientific data management and analysis program the CS program should work with the BES and BER experimental data communities as well as ASCR's traditional simulation and modeling community.</p>	<p>ASCR and BES held a joint workshop in October 2011. An additional joint workshop is in the planning stages and will include both BES and BER experimental communities. Program Managers from both programs continue to discuss needs.</p>
<p>ASCR should consider setting up a research program to build expertise in Machine Learning/Data Mining technologies in support of the Office of Science's mission for Big Data and data-intensive science</p>	<p>ASCR will continue to develop research programs in data analytics to meet the needs of the Office of Science. ASCR looks forward to the ASCAC Subpanel report on data-intensive science and Exascale to help define this work.</p>

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<p>2(c): Within the boundaries defined by DOE mission and available funding, comment on how the award process has affected the national and international standing of the portfolio elements:</p>	
<p>ASCR should do all that it can to ensure that it receives sufficient funding for the Exascale initiative for the US to remain internationally competitive.</p>	<p>ASCR leaders will continue to make the case for the Exascale Computing Initiative and its role in assuring the international competitiveness of the United States.</p>
<p>The program should maintain its leadership role in high end computing by continuing to engage with the international community.</p>	<p>ASCR is participating in a variety of international activities related to supercomputing in general and the Exascale Computing Initiative in particular. We expect to continue these within travel limitations.</p>

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General Observations:	
ASCR should work with the Office of Science to do everything possible to secure adequate funding for the Exascale initiative and protect US leadership in supercomputing technology.	ASCR continues to work with Office of Science leadership to develop plans and justification for the Exascale Computing Initiative and to make sure that it is funded at a level to protect U.S. leadership in supercomputing.
The COV recommends that ASCR negotiate to be allowed to fill the remaining approved CS vacancies as quickly as possible.	One position was advertised last summer and the applicant review process is under way. We hope to advertise a second position this year.