

ASCR@40: An Update on the ASCAC Subcommittee Documenting ASCR Impacts April 2020

April 23, 2020

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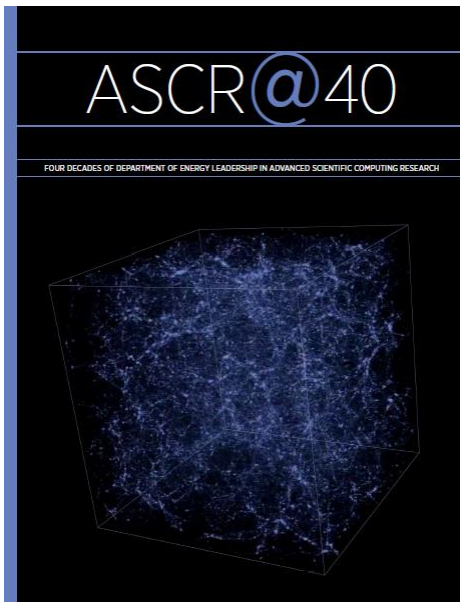
Reminder of the charge

- Steve Binkley charged ASCAC with producing a report that assesses and documents the historical accomplishments of the Advanced Scientific Computing (ASCR) program and its predecessors over the past four decades.
 - Highlight outstanding examples of major scientific accomplishments that have shaped the fields of ASCR research
 - Identify the lessons learned from these examples to motivate ASCR investment strategies in the future
 - Illuminate the guiding strategies and approaches that will be key to ensuring future U.S. leadership in the full range of disciplines stewarded by ASCR
 - Inform the investment strategy of the Office of Science
- The report should provide technical details as needed for context but should be primarily concerned with the essence of each story as it relates to the larger progress of science
- In Spring of 2019, request expanded to encompass two documents, one more technical and one more broadly accessible

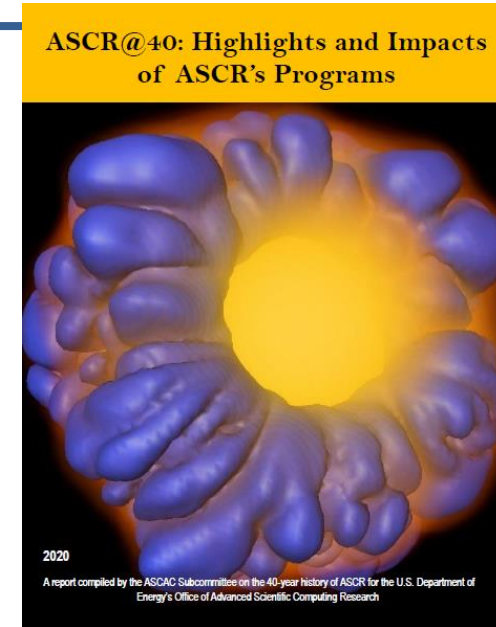


These two documents are nearing completion

- Detailed history document
 - Content essentially complete
 - Adding photos and imagery
 - Transitioning soon to design & layout



- Accessible document
 - Content complete
 - Design and layout are nearing completion



Subcommittee members

- Buddy Bland, ORNL
 - Jon Bashor, LBL
 - Jackie Chen, SNL
 - Phil Colella, LBNL
 - Tiffani Conner, ORAU
 - Eli Dart, LBNL
 - Jack Dongarra, UT & ORNL
 - Thom Dunning, PNNL
 - Ian Foster, UC & ANL
 - Richard Gerber, LBL
 - Bruce Hendrickson, LLNL, Chair
 - Wendy Huntoon, KINBER
 - Bill Johnston, LBNL (ret.)
 - Paul Messina, ANL, Former Chair
 - Jim Pool, Caltech (ret.)
 - John Sarrao, LANL
 - Jeff Vetter, ORNL
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- Bill Cannon (Krell) has led the crafting of the accessible document.

Feedback from January 2020 ASCAC meeting (1 of 2)

- ***Think afresh about adding references***

- We revisited this question and had a spirited discussion
 - A comprehensive bibliography is beyond our scope to provide
 - A limited bibliography would likely distort the history
 - All the technical work is in the archived literature already
- Strong consensus that a middle path was the best choice
 - We crafted an “additional reading” appendix with pointers to key non-technical documents
 - It is our expectation that OSTI will archive all of these and all the primary source material we uncovered on a web site that is easily accessible from the site for the document itself.

Feedback from January 2020 ASCAC meeting (2 of 2)

- **Add a discussion on ASCR's impact on climate science**
 - Engaged Jim Hack (ORNL) to help with this
 - Added a sidebar in the Computational Science Section
 - It tells a story of the **integrated** impact of many threads of ASCR work
 - Mathematics, platforms, software, data science, collaboration tools, visualization
- **Consider adding more recent work on foundational math**
 - Added a more recent vignette on compatible discretizations
 - Added some text clarifying our thinking:
 - *“Note that there can be a significant time lag between the creation of fundamental mathematical advances and their full impacts on applications. For this reason, in the discussion of foundational work in this section we focus mostly on activities that were conducted long enough ago that their impact is now evident.”*



Additional changes in detailed history document since last ASCAC meeting

- Made numerous small tweaks to the verbiage and presentation
- Comprehensively cleaned-up document for consistency and clarity (Bashor and Conners)
- Began adding images (Bashor and Conners)
 - We would welcome pointers to additional imagery
- Transitioning soon to design and layout



Accessible, impact-centric document

- Structured around exemplar impact stories, 3-4 pages each
 - Bill Cannon is overseeing the writing and execution of this document
 - Articles written by professional tech writers
 - “Shepherd” from committee for each article
- Articles have all been written
- Document in layout process
- Expected completion by June 1st



Questions?

