2016-10-05 XAB Mtg Raw Notes

Also on wiki: https://confluence.xsede.org/display/XT/2016-10-05+Meeting+notes

1. Review update
    a. Panel went very well; applause from panel after Kelly's CEE unprecedented
    b. Wrapping up response to the panel now
2. Welcome and XAB Expectations Review including Chair appointment
    a. Dan, Craig, and Shawn represent SP Forum
        i. Dan, Emre confirm
    b. Chair appointment
        i. Karin volunteered, voted, and accepted
3. ECSS Priorities
    a. Getting more requests for help than we can provide
    b. You ask for ECSS as a resource during the allocations process by answering a series of questions and can ask for support at any time during allocation cycle
    c. Slides
        i. PIs who have previously received ECSS support get lower priority
        ii. Projects suggested by the XRAC reviewers where the PI did not explicitly request ECSS support, even when being offered the opportunity, get lower priority. But ECSS will maintain a list of such projects and may revisit the project if the ECSS load lightens.
        iii. Prioritize support of community codes over support for individual projects
        iv. Projects with a bad fit to existing ECSS expertise get lower priority(but ECSS will try to recruit someone who does have the expertise)
    d. XAB discussion
        i. Tom - concerned with lower priorities. Community efforts prioritization. Consider performance-based approach rather than what is put into the proposal. Prioritization is from the proposal not from usage across the resources. For example, Polar codes not optimized should get parallelized to use GPUs. Users don't always know, and we could improve to reduce their allocation. Could monitor to see how the improvements affect performance
        ii. Cliff - what is the objective of the group? Not just to respond to the user needs. Optimizing the physical resources so that the most use can be made of them
        iii. Ralph - to improve the productivity of the user in advanced computing.
        iv. Cliff - human vs. hardware aspect, and there would be value to include the implementation of our strategic objectives with the limited resources we have
        v. Emre - who is responsible for efficient use? ECSS is a code improvement right?

vi. John - if we worked the the SPs, we could determine optimum use. Have looked at this in the past and could revisit

vii. Dan - floating point efficiency compared with how important it is to run the job--this is the job of the SP

viii. Tom - science driving needs should be included in priorities, for example digital humanities

ix. Ralph - do that according to de facto budget assigned to those areas. Murky process

x. Emre - if there is something to help XSEDE overall and/or the SPs. Who is responsible for what?

xi. John - we need to clearly articulate this. Have requested guidance from NSF on discipline priorities

xii. Tom - XSEDE could do its own prioritization. Review panels are biased and sadly NSF will not provide that guidance.

xiii. Karin - new for us to discuss this, but I think we should keep this on the agenda and figure out how to balance this.

xiv. Emre - ECSS has been a great success, XSEDE could decide ECSS priorities

xv. Cliff - compile information for NSF in order to meet community needs

xvi. Ralph - community codes are proactive in deciding without user requests to improve efficiency of codes. Encourage proposal for development request. Haven't based that on exalt data.

xvii. Karin - should understand the efficiency within a data-driven community and measure our needs against the data

xviii. Cliff - XSEDE sits in a privileged position and has an opportunity to capture data and determine the pulse of the community. Could capture data from the SPs for information for NSF

xix. John - that takes extra work and will require a shift in effort

xx. Tom - we know NSF is not doing it well, so this could help them with prioritization

xxi. Cliff - could implement it XSEDE wide with data capture rather than to form a resource necessary task.

xxii. John - XDMOD and trends. Also another reason we have set that area as a L2 within the project

xxiii. Karin - is there something else the board can recommend?

xxiv. John - we have provided a lot of response to NSF but no dialogue; understand that they cannot share with a project.

xxv. Cliff - they might not know what is going on, XSEDE does. Develop insight with supporting data.

xxvi. John - NSF is curious about Track 2 investments, they tend to overemphasize the innovative component. Need time to ramp up

xxvii. Ralph - strategy in ECSS is similar to NSF and how they support science. They respond to proposals and issue solicitations. What we are doing in

NIP is not different from the way NSF looks to emphasize a certain area. In ECSS success rate is higher than 30%

      xxviii.   Cliff - NSF has the gold and would like to rule. They have the gold, and XSEDE has the rule. Once they give the gold out, should improve science and develop workforce

      xxix.   Ralph - ECSS support is supposed to raise their ability to deal with research. Return in 3rd year will be lower than first year. Considered developing best practices documents for universities doing internal research computing.

      xxx.   Cliff - at next conference have tutorials for this work

      xxxi.   Dave - refine ways to measure impact

      xxxii.   John - would like to do this with XAB once that team has time to work

4. Project Improvement Fund
   a. See slides for process
   b. XAB discussion
      i. Cliff - will send his feedback to Ron
      ii. John - goal is to improve efficiencies. Cannot have a contingency fund, but we have this money set aside in order to respond to needs that come up through the next 5 years. Review panel will look closely at the process.
      iii. Cliff - want to respond to opportunities within the project. This is a linear process that will have more complexity. Consider a yes/no gate--make sure there are "off" ramps. Would like to see how these activities relate to strategic goals: risks, cost/benefit analysis, etc. Suggest ideas for how to deal with situation (cliff mentioned a good idea but I missed it when my internet ducked out for a moment). "Closed shop" need to define who can submit and whether this is internal or external
      iv. Dave L - ideas could come in from users requesting a new capability
      v. Tom - someone could have an idea in the community and not know who can bring it up
      vi. Dave L - have worked diligently to improve the flow of improvements and will have data to demonstrate that improvement
      vii. John - can't open up to the community, because that would make us a funding agency--that we cannot be. Incurring the subaward instantiation fee would not be cost effective.
      viii. Cliff - need criteria published with those funded. Need criteria to include "readiness". Globus as an example 5 years ago
      ix. John - at any stage, yes/no/not yet
      x. Cliff - "potential" for advancement
      xi. Spell out acronyms, photos of members, NSF as observers. How do you handle conflict of interest?
      xii. Dan - this is not a granting process, keep it simple.
5. XSEDE17 Conference Re-name

    a. XSEDE annual meeting often co-locates other meetings; this past year there were 6

    b. Have been developing notion of re-scoping the conference in order to grow to a community meeting

    c. Merging these groups into a forum of practical aspects of developing, delivering, supporting infrastructure supporting science. State of the practice or practice and experience. Strong technical aspects with a strong community slant.

    d. ACI-REF and CARC resource coordination award to build community around technical staff in research computing on a campus level

    e. Involvement as a project but no longer owned by XSEDE

    f. ARCC - Advancing Research Computing on Campuses, a successful event targeted toward the campuses.

    g. Bringing all of these into one event in order to take the event beyond XSEDE where some consider it an NSF project conference

    h. Practice and Experience in Advanced Research Computing - PEARC17

    i. The week of July 9th at the Hyatt Regency in New Orleans

    j. Tom - larger community guiding the merging not XSEDE taking over

    k. Dave - attracting a broader community of attendees. Not dramatically shifting what was happening at XSEDE. Building on

    l. John - ComputeCanada also interested, so the momentum is with us

    m. Cliff - why can XSEDE meet that growing need better than someone else?

    n. John - it is the difference between ownership and facilitation

    o. Cliff - what does XSEDE bring to the table that achieves this need in the community. Social, virtual community connections and including others in that conversation

    p. Karin - branding is important

    q. Dave - send names of speakers

    r. Cliff - XSEDE has experience and is now exploring how to further NSF's goal

    s. Shaowen - international? Significant growth potential and good for the community

    t. John - with ComputeCanada, yes

    u. Dan - agree with international

6. NSCI and XSEDE's Role

    a. http://www.nsf.gov/cise/nsci/

    b. https://www.whitehouse.gov/sites/whitehouse.gov/files/images/NSCI%20Strategic%20Plan.pdf

    c. Slides:

        i. NSF called on to provide leadership

            1. scientific discovery advances

            2. broader HPC ecosystem for scientific discovery

            3. workforce development

        ii. ACI playing key roles

            1. NSF lead for NSCI: Irene Qualters (ACI AD)

    2. NSF-wide working group: co-chaired by Rudi Eigenmann (ACI) and Eduardo Misawa (MPS)
   iii. Eigenmann is XSEDE Cognizant Program Officer
 d. XAB feedback
   i. Cliff - surprised to not see that position in the national community
 e. Slides:
   i. Anticipate this is largely funding of basic research
   ii. XSEDE potential contribution
    1. provision of integrated resources, services, and support enabling scientific discovery
   iii. XSEDE potential contribution
    1. defining and instantiating integrating infrastructure bringing order to the ecosystem
    2. connector of services
   iv. Supporting integration of wide range of capabilities into the ecosystem enabling coordinated use of same
    1. introduction to new technologies and facilitated use without investment
    2. support services enabling use of ecosystem
   v. XSEDE potential contribution
    1. significant success already in training the workforce
    2. supporting the emergence of a new profession
   vi. CI Professional/CI Engineer/etc.
    1. complementing campuses in developing computational science and engineering certificate and degree programs
   vii. Will need to treat this more broadly than CS&E
   viii. Future Directions for NSF Advanced Computing Infrastructure to Support U.S. Science and Engineering in 2017-2020
   ix. prepublication copy released April 28, 2016
   x. http://www.nap.edu/21886
    1. 11 contextual mentions
    2. 10 uses of data or information available from XSEDE to inform process
    3. 7 mentions of good practices of XSEDE
    4. 1 specific recommendation to build on XSEDE
    5. 2 of 5 Examples of the Science Impact of Advanced Computing
 f. XAB feedback:
   i. Cliff - don't anticipate new opportunities or ability to move NSF
   ii. John - how can we best align what we are doing with NSF
   iii. Karin - can strategize
   iv. Dan - NSF is working on solicitations. How does XSEDE intend to respond? Set of partners pursue NSCI funding or as individual

institutions--are there strategic areas the partners could consider working toward together? How to structure/divide the effort going forward

     v.   John - "when XSEDE turns 40 . . . " large-scale engagement that can go beyond our lifetime. Could broaden XSEDE scope. Could be some level of cooperation and federation that we have not done in the CI space yet. It is not cost-effective for the nation or the world if we don't and goes far beyond XSEDE; while we could play a role in it. Many NSF investments are opaque; for example, MREFC each have a significant CI cost. Can never recover that replication of the environment. Have to do that more effectively than we do today.

    vi.   Dan - XSEDE partner leadership should gather and determine how we will proceed.

   vii.   Karin - this group could build toward the calls rather than react

  viii.   Phil - communicating the important and need of HPC and impact

    ix.   Cliff - ACCI is soliciting input on how to proceed. Should be aware, as they will have influence on shaping how NSF will respond

    x.   John - Thom and Victoria Stodden (UIUC) are co-chairing that. Perhaps request time for ACCI agenda to gather suggestions; then they could make recommendations to NSF

    xi.   Cliff - be well prepared

   xii.   Karin - those channels will be profitable

  xiii.   John - XSEDE and partners do have constraints to some degree. Supplemental requests to our award will be discouraged. NSF prefers to see independent requests. They don't want XSEDE any bigger. Think it has to be a mix in the end. If there are funding ops, prefer to see the approach

  g. Slides:

    i.   The NSCI seeks to accomplish five strategic objectives in a government collaboration with industry and academia:

       1. accelerate the successful deployment and application of capable exascale computing;

       2. ensure that new technologies support coherence in data analytics as well as simulation and modeling;

       3. explore and accelerate new paths for future computing architectures and technologies, including digital computing and alternative computing paradigms;

       4. holistically expand capabilities and capacity of a robust and enduring HPC ecosystem; and

       5. establish an enduring public-private collaboration to ensure shared benefit across government, academia, and industry.

7. Allocations Policy review recommendations

  a. Slides:

    i.   The XSEDE team:

1. Jay Alameda, Emre Brooks, Lonnie Crosby, Ken Hackworth, David Hart, Chris Hempel, Ralph Roskies, Sergiu Sanielevici, Amy Schuele, Nancy Wilkins-Diehr

ii. Input sought and received from:

1. XSEDE User Advisory Committee, XRAC, Gateway PIs, SP Forum members, and others

iii. Close to finalizing recommendations
iv. Three categories of topics

1. Policy — Procedure — XRAS & Documentation

v. Making sure allocation policies and practices have evolved and continue to evolve with the resource environment.

vi. Targeting reduced barriers to entry, sufficiently rigorous review, and appropriate balance of formality/informality in procedures.

vii. Recommendations will be formally reviewed and approved by XSEDE SMT, SP Forum, and NSF.

viii. Implementation will be delegated to RAS

1. Recommendations may include some implementation concepts

2. RAS will produce an initial high-level implementation plan spanning all actionable recommendations.

ix. Implementation effort for specific recommendations will, in some cases, need further discussions to finalize implementation details and schedule.

x. *No change:* Overall, policies appropriate for requesting, reviewing diversity of resources

xi. *No change:* No support for cap on size of largest requests.

xii. *Recommendation:* Very large scale requests from major research facilities (e.g., LIGO) should be handled outside of the XSEDE allocation policies and procedures through discussions and agreements between NSF, the major research facility, and the affected Service Providers.

xiii. *Recommendation:* XSEDE and the Service Providers should adopt policies and procedures that allow investigators to request and receive allocations longer than one year.

xiv. *Recommendation:* XSEDE should consider capping the size of requests that are permissible without science-reviewed supporting grants.

xv. *Recommendation:* The approach to reducing XRAC recommendations to fit with availability limits following each meeting should not adopt an "all-or-nothing" approach, but should consider incorporating XRAC ratings into the reconciliation formula.

xvi. *Recommendation:* XSEDE and the Service Providers should adopt policies and procedures that allow investigators to request and receive allocations longer than one year.

xvii. *Recommendation:* XSEDE should consider capping the size of requests

that are permissible without science-reviewed supporting grants.

     xviii.   *Recommendation:* XSEDE should permit, in well defined situations and for specific purposes, the renewal of Startups allocations beyond one year.

     xix.   *Recommendation:* XSEDE should clarify the policies and exceptions when and if to restrict PIs and research groups to only one Research request and allow the XRAC to recommend exceptions on a case-by-case basis.

     xx.   *Recommendation:* Formally collect "Final Reports" from projects after completion.

     xxi.   *Recommendation:* Improve handling of and training for the review of and requests for diverse resources.

     xxii.   *Recommendation:* Provide optional document templates to help new users get started.

b. XAB feedback:

     i.   Cliff - opportunity to find out how to improve service?

     ii.   Dave - do collect a variety of surveys. Would prefer to not confuse science findings with this process

     iii.   Cliff - when looking at metrics, are there other opportunities to collect other data during this time? Consider following up with a certain number of folks via phone call or another method

     iv.   Phil - concerns with having to file a report and don't get feedback on it.

     v.   Dave - not intended to be burdensome.

     vi.   Dan - do we pull final reports into renewal requests? 90% are repeats so want to submit a report so that they can get another allocation. Same text twice issue.

     vii.   Dave - progress reports are part of the process and required for returning allocations. If they left for more than a year, they would have a final report request.

     viii.   Phil - final report or a new request. Might be valuable to summarize information about the project to help them create a final report.

c. Slides:

     i.   *Recommendation:* Define "rubric" for XRAC to use when reviewing, discussing requests.

         1. Draft provided to XRAC for August 2016 meeting

     ii.   *Recommendation:* Improve handling of and training for the review of and requests for diverse resources.

     iii.   *Recommendation:* Continue to improve process for science review of requests without supporting grants.

     iv.   *Recommendation:* Continue to monitor and look for ways to better manage XRAC meeting workload.

     v.   *Recommendation:* Investigate and evaluate approaches to smooth out the per-meeting variability in post-panel reduction process.

    vi.   *Recommendation:* Define process for reviewing, approving, and integrating SP-initiated practices and policies into XSEDE procedures and policies.

   vii.   *Recommendation:* Documentation needs attention overall to improve quality and instructional value

  viii.   *XRAS changes/improvements:* Various changes and improvements will be considered as part of implementing these recommendations

d. XAB feedback

     i.   Karin - good job with self-awareness

    ii.   Phil - estimated vs. variable. Jetstream may not be fully allocated. Some is portable. Time on Stampede and not try to get time on Jetstream. If they knew that more hours are available on Jetstream, could be useful information for those putting in allocation requests

   iii.   Dave - yes, that is on the list of elements to make more transparent in the allocation process

   iv.   Karin - balance of information so that people can understand the tradeoffs and opportunities. This group can ensure resources are well-labeled and know the tradeoffs going in. Load balancing is a tough nut to crack.