CCC Visioning Best Practices
December 2021
v3.1

WHAT IS VISIONING?

The mission of the CCC is to catalyze the computing research community and enable the pursuit of innovative, high-impact research. We have found the most effective way to do this is through the support of visioning activities for the community.

So what is visioning? Visioning is the process of nucleation, crystallization, and broadening awareness of computing research goals that are 5, 10, 20, or more years into the future. Once we accept a proposal (nucleation), we then sponsor and plan a visioning activity (crystallization), typically in the form of a workshop. This activity is followed by a community report (broadening), as well as additional activities with policymakers if appropriate. Through our visioning workshops, the CCC brings together a diverse set of people to speak openly about the challenges the field is facing around a topic or area and what real progress could look like within that domain.

The first step in the visioning process, **nucleation** is the formulation of a potential vision by a small number of people. That person or group identifies a problem that needs fixing (e.g., the prevalence of health disparities in society) or a technology trend that presents challenges we do not know how to meet (e.g., the gap between what quantum computers might be able to do and how we currently build and program them), as well as a community or technology poised to solve it. If you are ready to submit a visioning proposal, you are probably in this stage. We discuss what you need to prepare for your proposal in the next section.

Once you submit a proposal, the CCC and its network will help you to further refine your idea, for example by broadening or narrowing the scope of a potential workshop, suggesting potential workshop participants, or identifying related work.

Crystallization sharpens a vision through community participation, clarifying ideas and coming up with concrete research directions to overcome the challenges identified. This will typically take the form of a visioning workshop, which the CCC will fund and help you to plan. The steps required to plan a workshop are discussed in more detail further in the best practices document. Of course, workshops are not the only way that crystallization can occur – the CCC welcomes proposals that offer alternative methods.

The final step, **broadening**, focuses on the dissemination of the now crystalized idea to the broader research community, policy makers, and the general public. To this end, the workshop participants will be required to produce tangible content from the workshop in the form of a briefing slide deck and workshop report or white paper, as well as assist in spreading the workshop's key ideas in other forms as appropriate (e.g., present the idea at your next conference, participate in a Congressional briefing, write a guest blog post, or appear on the Catalyzing Computing podcast, etc.)

PREPARING A PROPOSAL

When developing a proposal, keep the following in mind:
- This is a proposal for an activity (or activities) to define a direction or to create and grow a community. This is not a research proposal, nor a proposal to assemble a group to write a research proposal.
- Be sure to have a plan to engage a diverse community: diverse with respect to discipline (both within and outside of computing), age, gender, ethnicity, institution, and intellectual approaches within the field and in adjacent fields.
- A problem is not enough. There should be a clear case for why there is currently an opportunity for progress in the area and some idea (though, of course, not definitive) of how we might be able to achieve that progress.
- Regarding outcomes: it would be helpful to think about and share what it would take for a federal agency to develop a program around the direction you're proposing or a place (e.g. CISE Directorate within NSF) where this new research area could be housed.
- Use the CCC Director (Ann Schwartz, aschwartz@cra.org) as a resource.

The RFP lists (https://cra.org/ccc/wp-content/uploads/sites/2/2019/12/Visioning.December-2019.pdf) what the proposal should include. Further explanation of each item is provided below:

A proposal should do the following:
- **Describe the visioning topic area and its current state of development within the field.** The area must be properly framed. Proposal reviewers are computer science researchers from a broad spectrum of areas. It cannot be assumed that they will have a full understanding of the area you are describing, so be clear and concise while giving an overview of the space.
- **Explain the proposed activities in detail**. Discuss the desired format of the workshop(s), how you will engage the different audiences, etc. If there is more than one activity proposed, be sure to explain the differences between the activities, the rationale for more than one activity, and the mechanisms to coordinate across activities.
- **Connect the activity and the vision.** How does the former support/foster the latter?
- **Justify why this vision and this activity are appropriate now.** You need to make the case for why this is important now. It's not a matter of getting good minds together to simply think on a topic. Why could the community benefit from such an activity now?
- **Describe how those outcomes can be used to advance the visioning topic area**. Be specific, for example:
  1) The workshop will generate a series of white papers written by X that will be shared with Y.
  2) The workshop report will be written and then presented to Z.
  3) Additional articles based on the workshop report will be written and submitted to W.

A complete proposal must also:
- **Identify the organizing committee.** Please ensure that there is broad representation of the appropriate communities on the organizing committee. The CCC Director and CCC Council can help suggest names.
- **Include short biographical sketches of the organizers.**

- **Propose a representative set of potential workshop invitees.** This does not need to be a complete list of invitees, but should capture the relative percentages of different "types" of attendees in terms of seniority, institution, research focus (both within and outside of computing), etc. Be sure to include representation from policy and funding organizations. Show how a diverse and broad representation of the community in this process will help move the conversation forward and create a new vision. One goal of the CCC is to bring together researchers who might not talk otherwise – singular domain visions, while important, are not our primary focus.
- **Discuss the tangible products that will be produced at the end of the workshop / activity.**
- **Provide a rough budget, with justification, and articulate how the success of the workshop and its outcomes can be assessed.**

PLANNING FOR THE WORKSHOP

A CCC Council Member will be as a liaison to the visioning activity to facilitate communication and ensure that activities are progressing as planned. It is best if this liaison is included in the Organizing Committee. The CCC Director is another resource throughout the process. Below is a list of typical tasks that are required for each visioning activity. Timelines will vary, of course, depending on a variety of factors.

2 weeks after notification of funding	Broad, one-page vision statement for this project, this will be used for the overview on the website	Lead PI
ASAP	Decide on location / date	Organizing Committee
ASAP	Secure hotel	CCC
6 months before workshop	Draft Agenda Invite List	Organizing Committee
4-5 months before	Create website Send out invites *See Appendix A	CCC
4-5 months before	Invite Speakers / Panel Leaders	Organizing Committee
3-4 months before	Fine tune agenda *See Appendix B for ideas to incorporate into workshops Publicize in CRN	Organizing Committee / CCC
2 months before	Finalize logistics (AV, menus) Follow up on invites	CCC
1 month before	Tighten up agenda, finalize panels, etc.	Organizing Committee
1 week before	Send information to participants (logistics, homework, etc.)	CCC

	Collect speaker information (slides, bios, etc.)	
1 week before	Print Materials	CCC
1 week after	Write post for the CCC blog if needed. Post workshop material on CCC website	Organizer / CCC
2 weeks after	Respond to workshop survey	Organizers / Participants
At workshop-2 months after	Draft briefing slides. Draft workshop report or white paper. Submitted for community (workshop participant) review.	Organizers / CCC
2-3 months after	Final workshop report or white paper posted on website and shared with broader community.	Organizers / CCC
3-12 months after	Agency Visits	Organizers / CCC

DISSEMINATING WORKSHOP RESULTS AND PRODUCTS
There are many ways to share the results of the visioning activity. Possibilities are listed below, and the CCC will work with the Organizing committee and policymakers to determine what makes the most sense. The CCC will support all dissemination activities.
- CCC Blog Post
- CRN Article
- Roundtable presentation(s) with Agencies
- Talk at a Related Conference
- DC Policy Meetings

Appendix A: Invitations

The CCC will send out and track invitation responses. We can invite all people at once, or do a tiered structure, depending on response rate. The key thing to remember is the importance of striving for broad representation among the attendees (discipline, gender, ethnicity, institution, sector, etc.), so it is important to monitor this in the responses and adjust accordingly.

Sample invitation:

Dear Dr. X,

On behalf of CRA's Computing Community Consortium (CCC) and co-organizers XXX and YYY, we invite you to participate in the upcoming workshop on TOPIC to be held on DATE in LOCATION.

This workshop will bring together computer science researchers with backgrounds in AAA, BBB, and CCC with policy makers, MMM, NNN, and business leaders to discuss methods to ensure GOAL.

The workshop will address these key areas:
- Area 1
- Area 2
- Area 3
- Area 4

The goal of the workshop is to produce a report that articulates best practices and research challenges with regards to TOPIC as well as provide a sense of direction for the field.

Note that your travel expenses will be fully covered by the CCC.

If you are able to join us, please register here by DATE and see the workshop website for additional information. If you are unable to join us, please simply respond to this email to let us know. If you have any additional questions, do not hesitate to reach out to CCC STAFF at EMAIL or any one of us.

Sincerely,
(List the Organizing Committee)

Appendix B: Workshop Ideas

It is important to **engage all participants** from the beginning. This is particularly important if the workshop crosses disciplines by bringing together disparate communities or has a healthy combination of researchers new to the area with more seasoned researchers – everyone needs an equal seat at the table. There are many ways to do this, some more appropriate for different audiences. Below are some suggestions, and the CCC is happy to provide examples and work with you to implement these ideas or others:

- Informal dinner or welcome reception the evening before meetings.
- Lightning Introductions: one slide per person, filled out ahead of time, and everyone has access to the slide deck before, during, and after the workshop.
- Opening Activity that has people sharing ideas (and selves), such as putting open challenges on a timeline.
- Unstructured time (with food) to encourage smaller discussions (at least 30 minute breaks if possible).

The **structure** of the workshop will vary, depending on many factors. The CCC can work with you to structure the workshop for maximum effectiveness. One important thing to remember is that there needs to be opportunities for participation from all attendees – through discussion breakouts, Q&A sessions, etc. It is critical to ensure that the workshop is not all presentations and plenary speakers.

It is important to have an **overall objective** for the workshop and to make that clear from the beginning (on the website / in the invitation). Is it to grow the field in numbers, to change the direction of the field or to create a whole new field?

Federal agency engagement is important, but the type of engagement should be weighed carefully. You do want federal agencies to be aware of the activity, as results of the workshop can be greatly impacted by the agencies. However, sometimes the appropriate engagement is simply for the agency people to be aware and observing. Other times, they can be active participants in the workshop, or even advisers to ideas being presented. The key thing to remember, though, is that the participants are giving up their time to attend the activity, and the flow should not be impacted by the activities of people representing federal agencies.