CCC Visioning Best Practices

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WHAT IS VISIONING?

The mission of the CCC is to catalyze the computing research community and enable the pursuit of innovative, high-impact research. One of the most important ways in which we 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 five, 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 to inform a visioning report that is circulated to the computing research community (broadening), as well as additional activities with agencies, policymakers, etc., as appropriate. Through visioning workshops, the CCC works with community members to bring together a diverse group of people to speak openly about the challenges that the field is facing around a topic or area, and what concrete progress could look like in 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. Once you submit a proposal, the CCC and its network will help you to further refine your ideas and plans, for example by broadening or narrowing the scope of a potential workshop, suggesting potential workshop participants, recommending workshop modalities, or identifying related work.

Crystallization sharpens a vision through community participation, clarification of ideas regarding the topic, and formulation of concrete research directions to overcome the associated challenges. While this will typically take the form of a visioning workshop, there are other ways in which CCC can help move your ideas forward, such as roundtables or white papers; please contact us if you have thoughts or questions about this. The steps involved in planning a visioning workshop are discussed in more detail further below.

The final visioning step, **broadening**, focuses on the dissemination of your ideas and recommendations to the computing research community, policy makers, funding agencies, and the general public. To make this happen, the workshop will need to produce timely, tangible content—in the form of a visioning report—as well as assist in spreading the workshop's key ideas in other forms (e.g., white papers for policymakers, presentations at conferences, participation in a Congressional briefing, creation of a guest blog post for the CCC, social media posts, etc.) CCC staff can help you understand and follow up on the appropriate options.

The RFP (https://cra.org/ccc/visioning/rfp-creating-visions-for-computing-research/) provides an overview of the visioning-workshop process, including contact information for the CCC. The rest of this document describes best practices for putting together a successful proposal and running a high-impact visioning activity. As a first step, we highly encourage submission of a short letter of intent, submitted to cccrfp@cra.org (no more than one page in length), that briefly addresses the key points listed below. CCC will provide initial feedback for use in helping you to prepare a full proposal as per the guidelines below. The length of the full project proposal should be commensurate with the scope of the proposed activities, but not longer than six pages.

PREPARING A PROPOSAL

When developing a proposal, keep the following in mind:

- A computing research topic needs to be the primary focus of the proposed visioning activity.

- Be sure to have a plan to engage a diverse community: diverse with respect to discipline (potentially both within and outside of computing), age, gender, ethnicity, institution, and intellectual approaches, both 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 at least some idea (though, of course, not definitive) as to how we might be able to achieve that progress.

- 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 to secure funding for the participants, nor a proposal to assemble a group to write a research proposal.

- That being said, it can 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, including a place (e.g. CISE Directorate within NSF) where this new research area could be housed.

- Use the CCC staff (cccstaff@cra.org) as a resource.

A proposal should do the following:

- **Describe the visioning topic area, its current state of development within the computing research field, and its connection to the mission of the CCC.** The area and scope must be properly framed and set in context. Which aspects of the CCC's mission will be supported by this workshop? In writing this description please be aware that proposal reviewers are computing researchers from a broad spectrum of areas. It cannot be assumed that they will have a full understanding of your specific area, 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), who the audience(s) are, how you will engage them, etc. If you are proposing more than one activity, be sure to explain the differences between them, the rationale for more than one activity, the products expected from each one, and the mechanisms to coordinate across activities. Be sure to describe the specific goals of your activity.

- **Connect the activity and the vision.** How does the former support/foster the latter?

- **Justify why this vision and this activity are appropriate now.** Visioning is not simply a matter of getting good minds together to think on a topic. Why could the computing research community, and society at large, benefit from such an activity *now*? How does what you are proposing complement other related activities that may be underway?

- **Describe how the outcomes of the activities can be used to advance the visioning topic area**. Be specific, for example:

    1) The workshop will generate a series of white papers about computing research topic XXX that will be shared with YYY.
    2) Additional articles based on the workshop findings will be written and submitted to WWW.

    Please note that a formal visioning report is a required product for all CCC-funded workshops.

A complete proposal must also:

- **Identify the organizing committee.** Please ensure that there is good representation of the appropriate communities and different institutions 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.** A diverse and broad representation of the community in this process will help move the conversation forward and create a new vision. You need not provide a complete, final list of invitees, but please do 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 appropriate policy and funding organizations. We encourage each workshop organizer to invite at least one student/mentee/entry-level individual.

- **Provide an outline [one page, max] of the resources that you will need for your workshop:** categories could include meeting space, breakout rooms, videoconferencing facilities, any extras. Please also suggest appropriate locations (e.g., in DC to facilitate agency involvement? Co-located with a particular conference?) There is no need to include catering, travel, and lodging in this document; the CCC staff will work with you on those elements of the workshop.

- **Describe what the outcomes of a successful workshop would be.**

PLANNING FOR THE WORKSHOP

Once your visioning workshop has been approved, a CCC Council member will be appointed to act as your liaison, both to facilitate communication and to ensure that activities are progressing as planned. It is best if this liaison is included in the Organizing Committee. A CCC Program Associate will also be assigned to your workshop, and they will assist with scheduling meetings, taking notes during the workshop, organizing calls, providing guidance as needed, etc. The CCC Evaluator will meet with you to refine your list of outcomes and create an evaluation plan. The

CCC Director is another resource throughout the process.

Below is a list of the tasks and steps that are required for each visioning activity.

When	What	Who
ASAP	Decide on a set of candidate dates and locations	Organizing Committee
ASAP	Finalize dates & location; secure hotel	CCC
6 months before workshop	Finalize invitation list and run by CCC for approval; meet with CCC's evaluator and Communications team to formulate outcomes and assessment strategies	Organizing Committee & CCC
4-5 months before	Create website	CCC
4-5 months before	Draft agenda; send out invitations (See Appendix A)	Organizing Committee
3-4 months before	Fine tune agenda (See Appendix B); publicize in the CRA's Computing Research News (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.); collect speaker/panelist information (slides, bios, etc.)	CCC

1 week before	Print materials	CCC
1 week after	Write a post for the CCC blog; post workshop material (agenda, slides, etc.) on CCC website	Organizing Committee & CCC
2 weeks after	Respond to workshop survey	Organizing Committee & Participants
1 month after	Meet with CCC to debrief from the workshop, revisit the outcomes and assessments laid out in the evaluation plan, discuss survey results, and plan the workshop products.	Organizing Committee
1-2 months after	Draft visioning report; send to participants for feedback and input	Organizing Committee
2-3 months after	Review & approve workshop products, including visioning report	Organizing Committee & CCC
4-6 months after	Final visioning report posted on CCC website and shared with the broader community, including appropriate funding and policymaking organizations	Organizing Committee & CCC
6-18 months after	Additional workshop products: white papers, articles, agency visits, briefings, conference presentations, social media posts, etc.	Organizing Committee & CCC

SOME IMPORTANT CONSIDERATIONS

Visioning-workshop products are crucial for CCC, the broader computing research community, and our funders. If there will be challenges in meeting the goals on this timeline, we encourage you to consider alternative funding mechanisms for your workshop, or other mechanisms for achieving your visioning goals (e.g., arranging a virtual roundtable and writing a white paper).

WORKSHOP RESULTS AND PRODUCTS

The most important product of a visioning workshop is a thorough and timely visioning report, along with one or more white papers, journal articles, conference presentations, social media posts, etc., as appropriate. This should not be viewed simply as a requirement for holding a workshop. The products that you develop have the **potential to effect real change** in how research is funded and conducted. While policy cannot be a direct focus of CCC's work, the information in our visioning workshop products has contributed to high-level policy and procedural changes. In our experience, the impact is highest when the workshop organizers and participants pay careful attention—throughout the planning process as well as during the workshop—to the message that they would like to disseminate to the research community, as well as to funding agencies and policymakers. When deciding on session topics and speakers, for example, the Organizing Committee should be mindful of how these sessions will delve into topics that will be spotlighted in the workshop products. We recommend discussing these goals with potential speakers as well, to make sure that their presentations focus on needs in the research community and/or needs from stakeholders and policymakers, with an eye towards how those will be presented in the workshop products.

It is critical to begin work on the overall visioning report *soon after the event*, while momentum and interest from your attendees is high and important details are fresh in everyones' minds. The CCC staff and Council liaison will support you in writing this report. As you work on drafting it, please keep in mind the audience(s) for which it is intended. Whether you hope to reach industry stakeholders, funding agencies, policymakers, community leaders, interdisciplinary researchers, and/or the broader computing community, your topic focus, word choice, report structure, and recommendations should be targeted towards that audience. CCC staff members can share examples of past reports that have been developed with different audiences in mind. Before being finalized, your draft should be circulated to the attendees for feedback and input, and also provided to the CCC for review and approval.

In addition to the required visioning report, there are many other ways to leverage the results of the visioning activity to effect change, including:

- CCC Blog Post
- Article in CRN, CACM, IEEE Computer, etc.
- Roundtable presentation(s) with agencies
- Talk at related conferences
- DC policy meetings

The CCC will work with the Organizing Committee to determine what makes the most sense and offer appropriate support for all dissemination activities. Additionally, in collaboration with CCC's Evaluator, the Organizing Committee must produce an evaluation plan for their workshop at least six months before it is held. In the debriefing conversation, to be held within one month after the workshop, the Organizing Committee will revisit that plan with the Evaluator, discussing the outcomes and survey results, as well as the structure of the workshop and the overall visioning report.

Appendix A: Invitations

The CCC will send out and track invitation responses. We can invite people all at once, or do a tiered structure, depending on your desires (and the 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 X,

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

This workshop will bring together computing researchers with backgrounds in AAA, BBB, and CCC with policy makers, MMM, NNN, and industry representatives to discuss methods to ensure GOAL.

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

The goal of the workshop is to produce a report [and white papers, blog posts, …] that articulate(s) opportunities and research challenges with regards to TOPIC, as well as provide a sense of direction for the field.

Note that your travel expenses that follow the CRA Uniform Travel Policy will be fully covered by the CCC.

If you are able to join us, please register here by DATE and see the workshop website NNNNN 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 have an **overall objective** for the workshop and to make that clear from the beginning (on the website and in the invitation). Is it to grow the field in numbers, to change the direction of the field, to create a whole new field, or to attract resources to the field?

Federal agency involvement is important, but the format for that should be planned thoughtfully. You do want federal agencies to be aware of the activity, as results of the workshop can be leveraged by the agencies. However, sometimes the appropriate engagement is simply for the agency people to be aware and observe. 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, nor should the workshop turn into a venue for people to pitch their personal agenda to agency representatives.

It is important to **engage all participants** from the beginning. This is particularly important if the workshop crosses disciplines or brings together researchers new to the area with more-seasoned researchers – the goal is to have as many stakeholders at the table as possible. There are many ways to do this, some more appropriate for different audiences. Below are a few suggestions. 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, accessible to all participants before, during, and after the workshop.

- Opening activity that has people sharing ideas, such as articulating open challenges and putting potential solutions on a timeline.

- Sharing optional reading material with attendees before the workshop to make them aware of information/concerns in each others' areas and possibly lexicons that may be unfamiliar to some of your participants.

- Conveying brainstorming questions to participants before the workshop in order to prime discussions.

The **structure** of the workshop will vary, depending on many factors. The CCC can work with you to design the agenda for maximum effectiveness. One important thing to remember is that there need 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.* There **must** be significant unstructured time (at least 30 min breaks, for instance) to encourage sidechannel connections and discussions, and also significant time for discussion *during* the workshop sessions. A blend of different session formats (e.g., panels, presentations, unconference sessions, tabletop exercises, small group discussions with report outs, etc.) can be very effective.

We encourage you to consider a two-part workshop structure: pairing a traditional by-invitation, in-person event with an open virtual event that is publicized broadly. In our experience, this works best when the virtual meeting is not simply a webinar to share results,

but rather an event that engages the full audience through Q&A and topic-focused breakout rooms. The in-person and virtual events should be separated by at least a few weeks, so that the outputs of one can inform the other, while still enabling new ideas. You may wish to have the in-person event first and the virtual event second, or vice versa, or even have two virtual events, one before and one after the in-person event..

There are other possible structures as well, including short workshop series. If your activity requires multiple workshops in a series, please justify and explain what products would come out of each workshop and how information and ideas would feed through the series. *Please be aware that funding for later events in a multi-workshop series will be conditional upon appropriate progress in the earlier stages.*

You may wish to choose midday start and end times for your meeting in order to make travel easier. A DC-area location can be advantageous if your workshop would benefit from agency involvement. The building in which the CRA offices are located has a modern conference center on the first floor that can hold 40 people, with 3 breakout rooms that can hold 10 people each; this is available with appropriate notice to CCC workshops.

Again, please do not hesitate to reach out to us if you have any questions—before, during or after you finalize your proposal.