

**CCC Visioning Best Practices**  
**September 9, 2014**  
**v1.0**

**WHAT IS VISIONING**

Visioning can be viewed as a process of (1) nucleation, (2) crystallization and broadening, (3) program formulation, and (4) program realization and execution. The goal of the CCC visioning effort (program?) is to facilitate this process.

**Nucleation** is the formulation of the germ of a vision by a small number of people. This stage might happen at a workshop, via email, or in the halls at a conference. It occurs when a small group realizes, for example, that there is a problem that needs fixing and they have an idea how to go about it (e.g., the Internet), or that there is a technology trend that presents challenges we do not know how to meet (e.g., multi-core to many-core). The CCC encourages the nucleation of visions by providing exemplars of successful efforts and by providing seed funding that enables groups to get together, hold workshops, or otherwise develop a clear description of an interesting idea and a plan for how to develop it into a compelling vision. To be successful, those groups must include some of the leading thinkers in the field, even if they are not among the initiators. The output of the nucleation stage is a conceptual document that describes an exciting idea, demonstrates the existence of a core team committed to evolving the idea, and proposes the establishment of a study group and/or the convening of a focused set of workshops for the next stage.

**Crystallization and broadening** sharpens a vision through community participation, clarifying the ideas (e.g., "Terrific elevator speech, but beef up the actionable research thrusts.") and expanding them to enlarge their scope of applicability (e.g., "Great research topics, but fit them into a broader context that will sell them."). This step can take a lot of time, and it involves lots more than a single workshop. It requires broad consultation so that the elaboration of the vision consists of widely shared points of view. The CCC will fund study groups that are sustained over a period of time, or multiple workshops that involve far more people than the original nucleation group. During this stage, funding agencies and technical interest groups of professional societies must be involved to ensure broad community engagement and to start to pave a path to a funded program. Community ownership is an important outcome here. The output of the stage is a document that describes a clear and compelling vision, a set of research initiatives that would, if successful, realize that vision, and an indication of the scope of the effort required to realize the vision. In addition to the document, it is also important that the community is developed around this vision, so they can help drive the initiative forward, and be prepared to do the research when the opportunity arises.

**Program formulation** occurs when the CCC, with help from the research community, works with funding agencies to formulate specific programs. This stage serves as a handoff from the research community to the funding agencies. The goal is to develop a game plan for a funded program: it is no longer just researchers formulating ideas. One test for readiness is that there are some ongoing projects that would fit into this program if it existed. There are many possible paths forward during this stage, ranging from a small funded program, to coalescing and expanding existing activities, to a new effort mostly drawing on existing funding, to a major effort backed by Congressional appropriations. The role of the CCC in this process is to help funding agencies define programs and, when appropriate, also to work with industry and foundations. The output of this stage is a concrete proposal for one or more funded research programs. The CCC will work with the organizers to share their report with the appropriate funding agencies. However, it is important to have agency buy-in from the beginning, by including appropriate agency representatives throughout the process.

**Program realization and execution** occurs when a program is incorporated into the budget of one or more agencies and actual implementation of the funded research program begins.

## 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 age, gender, and intellectual approaches within the field.
- There should be a clear case for why there is currently an opportunity for progress in the area.
- 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.

The RFP lists 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, how you will engage the different audiences, etc.
  - If there is more than one activity, 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.
- describe how those outcomes can be used to advance the visioning topic area:
  - Be specific, for example:
    - The workshop will generate a series of whitepapers written by...that will be shared with...
    - The workshop report will be written and then presented to...
    - A set of slides will be created for...
    - Additional articles based on the workshop report will be written and submitted to...

A complete proposal must also:

- identify the organizing committee,
  - Ensure that there is broad representation of the appropriate communities on the organizing committee
- include biographical sketches of the organizers,
- propose a representative set of potential workshop invitees,
  - Be sure to include representation from policy and funding organizations

- Show how the diversity and broad representation of the community in this process will help move the conversation forward and create a new vision
- provide a 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 serve 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
2 weeks before	Send information to participants (logistics, homework, etc.) Collect speaker information (slides, bios, etc.)	CCC
1 week before	Print Materials	CCC
1 week after	Write post for the CCC blog and send to CCC Director Post workshop material on CCC website	Organizer / CCC
2 weeks after	Respond to workshop survey	Organizers / Participants
1-2 months after	Final workshop report and/or white papers	Organizers
3 months after	Printed report, with distribution to participants and agencies	CCC
3-12 months after	Agency Visits	Organizers

## Appendix A: Invitations

Typically, 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 (gender, ethnicity, institution, sector, etc.), so it is important to monitor this in the responses and adjust accordingly.

Sample invites:

Dear Dr. X,

We are writing to invite you to participate in a two day workshop that will chart a course for future research related to the modeling of uncertainty in computations and the ways in which the uncertainty inherent in many computational processes can be communicated to those tasked with making decisions based on such data. The workshop will bring together representatives of federal funding agencies, policy makers, and top researchers to consider the problem in a holistic manner, ranging from simulation science and data analytics, through techniques for communicating uncertain data, to the needs of decision makers that must cope with uncertain information. It will address these issues by defining a set of research challenges for the field and charting an interdisciplinary research agenda for addressing these challenges.

The workshop will be held October 15-16, 2014 in Washington, DC, starting the morning of the first day and ending in the early afternoon of the second day. If you are able to join us, please register [here](#) by August 28. Additional information can be found on our [website](#). If you have any questions, please feel free to contact Helen Vasaly at [hvasaly@cra.org](mailto:hvasaly@cra.org) or any one of us.

Sincerely,

(List the Organizing Committee)

Dear Dr. X,

We are writing to invite you to participate in a two day workshop that will bring together needed interdisciplinary expertise, assess the state of the science at the human, medical, and technology levels, and articulate a research vision for a systems approach to the development of technologies to support aging in place for seniors and those with disabilities who have chronic health conditions.

The expected outcome of this activity is a white paper describing a research agenda that can inform new public and privately-funded research on home health technologies for an aging and disabled population. The goal is for this to lead to new research programs to evaluate the use of these technologies for extending the active and healthy living of seniors and those with disabilities.

The workshop will be held September 10-11, 2014 at the National Institutes of Health in Bethesda, MD, starting the morning of the first day and ending in the early afternoon of the second day. As an invited participant, we would be pleased to cover your travel and lodging and to provide meals during your stay. If you are able to join us, please register [here](#) by Aug. 1.

Additional information can be found on our [website](#). If you have any questions, please feel free to contact Helen Vasaly at [hvasaly@cra.org](mailto:hvasaly@cra.org) or any one of us.

Sincerely,

(List the Organizing Committee)

Follow up invite:

Dear X,

We are following up to an invitation sent two weeks ago inviting you to join us for a 2 ½ day workshop from June 18 to 20, 2014 at the Woodrow Wilson International Center for Scholars in Washington, DC to explore the past and prospective impact of human computation (HC) and to identify the research areas and activities that will directly lead to the most beneficial societal outcomes. The goal of the workshop is to produce a national research roadmap for HC that will be briefed to the Hill toward new research funding and a national HC initiative.

Today we are witnessing a rapid integration of humans into information-processing systems. Some of this is emergent (e.g., social networks) and some deliberate (e.g., crowdsourcing). A research area has coalesced around understanding and engineering such systems toward novel capabilities. Indeed, these HC systems are embedded in society today, predicting epidemics, supporting crisis relief, improving patient outcomes, producing scientific data, enabling collective governance, augmenting collaboration, and archiving history.

Despite these claims, the vast transformative potential of HC has only begun to be tapped. Only by considering deeply the space of research possibilities and potential applications of HC from a variety of multidisciplinary perspectives can we hope to crystalize a vision that can guide us conscientiously and deliberately toward a maximally effective research agenda.

Please join us along with various federal funding agency representatives, U.S. policy-makers, and 35 esteemed research colleagues, including Mary Catherine Bateson, Lukas Biewald, Stuart Lynn, and Michael Witbrock in charting the future course of human computation research. We will be pleased to cover your travel and lodging and to provide meals during your stay. **If you are able to join us, please register [here](#) by April 24. Additional information can be found on our [website](#).** If you have any questions, please feel free to contact Ann Drobnis at [adrobnis@cra.org](mailto:adrobnis@cra.org) or any one of us.

Sincerely,

## 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 has 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 the evening before meetings
- Lightning Introductions
  - 1 slide per person, filled out ahead of time, and everyone has access to the slide deck before, during and after workshop
- Unstructured time (with food) to encourage smaller discussions

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 – 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.