CaRCC Capabilities Model Focused Tools Engagement Guide and Script

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Introduction

One important mission of the Campus Research Computing Consortium (CaRCC) is to support research computing and data (RCD) professionals and facilitators as they work to enable better and more effective programs to support research. CaRCC is also committed to empowering small and emerging RCD programs at institutions with modest resources. The following Engagement Guide and Script was developed to help RCD facilitators conduct initial engagement discussions with these smaller, less-resourced institutions. It is designed to help the facilitator evaluate an emerging program's existing levels of support for research, identify their key challenges, and help them set goals for potential growth and expansion.

In this guide we suggest a process of engagement starting with initial survey questions, through interviews, and finally, to presentation of ideas and concepts. Facilitators are free to use any part of this work to enhance the research support engagement process.

We welcome and value your feedback and questions on this guide. Please contact capsmodel-help@carcc.org.

Acknowledgement

About the Focused Tools Committee

The Focused Tools Committee provides easy-to-use assessment tools for smaller and/or less resourced institutions to support their RCD strategic planning and CI Plan documentation. Tools include this script and the "Chart-Your-Own-Journey" version of the Capabilities Model. The committee also serves to:

- Learn about the current landscape of IT resources for computing and data-intensive research and research education at the less resourced institutions.

- Support advocacy for the needs for these institutions and role of the individual institutions, community, and funding agencies in addressing those needs.

Objectives for the Facilitator and Institution

- Gather unstructured information on how researchers (at a given institution) are currently operating and learn where they go for help and to ask questions
- Identify people at the institution who can participate in a full campus computing and data needs assessment and CI planning process, potentially completing the full Caps Model survey. Steps include:
  - **Pre-interview** - self-guided survey of basic information about the scale/structure of the institution
  - **Facilitated interview**s - a more complex survey that requires discussion with the facilitator to identify nuances of technology organization(s), research support structure, leadership/strategic planning, etc. Information will be gathered about the existing state of support for research, including current and future needs, as well as what gaps exist between those needs and what is currently available.
- Educate participants in a common vocabulary around RCD assessment and planning
- Bring together a group of stakeholders from across the institution to plan for and develop a Cyberinfrastructure (CI) strategy
- Prepare for the strategic planning process and for potentially using the Capabilities Model
  - Outcome should help the institution start to think about RCD strategy
    - Who should they be talking to?
    - What should they be concerned about?
  - Findings based on results from focus groups and facilitated interviews can be used to communicate to campus leadership about the RCD needs of the institution, and the gap between those needs and what is currently available. In addition, the findings can help the institution to prioritize the next set of investments and identify potential funding opportunities to pursue.

Engagement Process

1. Identify institution and an institutional advocate/champion (campus leader, i.e.VP for Research or CIO)
2. Conduct a pre-interview survey to learn more about institution and identify other roles for interview/focus group
3. Schedule and conduct an initial interview
4. Work with the institutional advocate to gather a focus group:
   - Identify a stakeholder group or person for each Facing (See Appendix A) Note: one person may have multiple roles
   - Create opportunities to engage with researchers about their research
     - Send out communications to solicit researcher input
     - Attend departmental meetings and ask about research activities
     - Hold social gatherings to collect information and promote participation
   - Suggest contacting departmental IT staff and IT director/managers and inquire about research support, service offerings, campus infrastructure, …, etc.
   - Suggest contacting CIO and/or VPR and ask about resources to fill out model
   - Suggestions on who should answer what questions:
     - VPR/CIO - Strategy

- IT - Software/Systems
- Researchers/RCD professionals - Research
- Librarians/IT/Researchers - Data
● Conduct seminars or presentations to raise awareness of regional and national resources (communities, CAPS Model)

The key to success in the pre-survey/interview/model is identifying and recruiting the right people to answer the questions in each topic/area. Note that one person may have multiple roles. It is important to understand the administrative/power/financial structure of the institution to identify who will have the most impact in being exposed to/filling out the model. The following are some suggestions to learn about research (needs) at an institution.

● Consider any exceptional requirements posed by research and scholarship
● Understand research requirements for the campus through dialogue with researchers and research support units (ADR's or equivalent are useful campus personnel to engage)
● Establish a way for researchers to provide input to the process
● A key to a successful engagement with the model requires a multi-role partnership involving faculty researchers, the IT organization, library, and other campus administrators involved in research funding and support (one person may have multiple roles).
● Consider the institution's areas of interest and strategic direction (is the institution looking to increase research and innovation focus?)

Pre-interview survey questions (Suggested)

This survey aims to gain general information about the institution and identify additional individuals at the institution who can and should participate in in-depth discussion. It is important to learn about the computational and cyberinfrastructure environment at the institution, including the challenges and opportunities for supporting the research community.

1. Full Name
2. Official Job Title
3. Institution Name
4. What best describes your role(s) at your institution? Role(s) [Multi-Selection]
   - Faculty or Staff with teaching responsibilities
   - Faculty or Staff doing research
   - Student
   - Campus IT Staff
   - Senior IT Leader (e.g. CIO or similar)
   - Other Campus Leader
   - Other Campus Staff
   - Consultant or other non-Employee
5. Are there others who should be included for scheduling a first conversation? (If yes, please provide names and email addresses. The first conversation can otherwise include a discussion of whether/whom to engage for any downstream conversations or work.)
6. How did you become interested in engaging with us?
7. If interested in the Capabilities Model tools, what are your objectives for engagement?
   - How do you plan to use it?

- ○ What do you hope to gain from using the tools?
8. Is your institution primarily research or teaching oriented?
    - ○ Research Essential: Research and teaching are the primary missions, but research is what really drives faculty and institutional success.
    - ○ Teaching Essential: Teaching is the primary mission, and faculty research does not factor heavily in faculty and institutional success
    - ○ Balanced: Research and teaching are both primary missions, and they are equally important for faculty and institutional success.
    - ○ Teaching Favored: Teaching is the primary mission, but faculty research is rewarded.

Initial interview/focus Group and Presentation

Facilitator opening statement: Today we're talking about cyberinfrastructure and institutional support of computational and data-intensive research. Advanced cyberinfrastructure includes networks, software, data storage, high performance computing environments, and support (including expertise) for these components. Today's conversation will allow us to collect information about the needs of the institution to achieve its goals. Your participation will help develop a cyberinfrastructure plan which can be used by the institution to guide its efforts. Also, such a plan is required in any funding requests that seek to build cyberinfrastructure. Building advanced cyberinfrastructure will advance research and education at institutions and create a stronger research-oriented environment. Note, facilitator can be an internal advocate/champion, or an individual from an external partner organization, such as a member of the Research and Education community.

1. Does your institution have a strategic plan overall? (note: look for new research goals, teaching goals that will require major RCD support).
2. Does the campus have a research strategic plan, or areas of emphasis from the VPR (or major research Deans)?
3. From your perspective, what are the primary areas of research at your institution?
    - ○ Disciplines/areas of research
4. How well does your existing research support meet the needs of researchers?
    - ○ Do you have institutional support for research activities on campus or is research support ad-hoc/one off?
    - ○ Do you have a sponsored research program?
    - ○ Are there research support personnel (individual/unit/central) available to help research groups
    - ○ Is there pre- and post-grant administrative support (sponsored research) at the unit or institutional level or both?
5. What are the general research and technology structures at your institution?
    - ○ Do you have a central IT group
    - ○ Do you have a research IT group
    - ○ Do you have a Chief Information Officer (CIO)?
    - ○ Do you have a Vice President for Research (VPR)?
6. What are the immediate CI needs/requests on campus today?
    - ○ Common requests from researchers
    - ○ Leadership's priorities
    - ○ What are the research IT needs for support, networking, storage, computation, …, etc.

7. Who are your stakeholders?
    ○ Which stakeholders/leaders on campus have responsibility or significant interest in supporting research? Do you have aspirational peer institutions to approach for guidance?
    ○ Who on your campus manages proposal/grant functions and funds/accounts?
    ○ Would you have the ability to survey or interview faculty to understand needs for a variety of research CI capabilities? Who on campus could help you identify and contact these individuals?
    ○ Which organizations and people operate existing research CI? Or could? Where are they within the campus organizational structure?
8. What are your available baseline services/tools?
9. How familiar are you with the regional and national communities: CaRCC, CaRCC Facings, and/or the RCD community in general?

Presentation/Seminar

Once a core engaged team has been identified, provide a seminar(s) and/or presentation(s) to educate them on key concepts and share important information. Suggested topics include:

● Introduction to RCD Communities
    ○ If unfamiliar with CaRCC and/or the RCD community: Develop and share a glossary/translation table for RCD to establish a common vocabulary
        ■ Introduce CaRCC and the concept of the five Facings
            ● Note that at our target campuses there may not be any concept of the Facings at the institutional level.
    ○ Other useful communities
● Introduction of the CaRCC Capabilities Model
    ○ Describe the Model
    ○ Examples of ways to use the Model (Being sure to make the case for why they would want to participate):
        ● Identify gaps
        ● Strategic planning
        ● Help build research program
        ● Help with CI plan
        ● Compare themselves with peer institutions
        ● Help develop a community of practice
    ○ Show how other institutions/groups filled out the Model and who from their institutions were involved
    ○ Give examples of how others have used the Model

Appendix: The CaRCC Facings Model

The Facings Model recognizes different roles that staff and faculty fill in supporting Research Computing and Data (RCD), with names that reflect who or what each role is facing (i.e., focused on). It is important to note that these are *roles* and not *persons*, and many RCD professionals act in more than one of these roles. In a small RCD organization, one or two individuals may cover these different roles, and while a large center may have a team associated with each facing, the work of some team members may still span more than one facing.

The five Facings are:

Researcher-Facing Roles. Includes research computing and data staffing, outreach, and advanced support, as well as support in the management of the research lifecycle.
Example roles include: Research IT User Support, Research Computing Facilitator, Research Data Consultant, etc.[2].

Data-Facing Roles. Includes data creation; data discovery and collection; data analysis and visualization; research data curation, storage, backup, preservation, and transfer; and research data policy compliance.
Example roles include: Research Data Management specialist, Data Librarian, Data Scientist, etc.

Software-Facing Roles. Includes software package management, research software development, research software optimization or troubleshooting, workflow engineering, containers and cloud computing, securing access to software, and software associated with physical specimens.
Example roles include: Research Software Engineer, Applications Specialist, Data Engineer, etc..

Systems-Facing Roles. Includes infrastructure systems, systems administration and operations, networking engineering, and systems security and compliance.
Example roles include: HPC systems engineer, Storage Engineer, Network Engineer.

Strategy and Policy-Facing Roles. Includes RCD leadership, institutional alignment, culture for research support, funding, and partnerships and engagement with external communities.
Example roles include: Director, Assistant/Associate Director, etc.