CRA/CRA-I Value Proposition to Industry

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Version 1

The Computing Research Association (CRA) and CRA-Industry (CRA-I) offer a wide range of benefits to large corporations, small businesses, and national/government labs. By fostering collaboration across industry, academia, and government, CRA and CRA-I creates opportunities for accessing talent, thought leadership, sharing best practices, and building effective partnerships.

Connections, Networking, & Partnerships

- **Academia - Industry Partnership**
  - **Best Practices Development**: Many CRA-I discussions have focused on academia-industry partnerships, often centered around big companies with substantial resources. CRA-I develops best practices for other relationships, including partnerships involving small and medium sized companies, multiple universities, and independent departments within large corporations. CRA-I convenes these members, their academic counterparts, and policymakers in periodic workshops to develop best practices around issues of mutual interest.
  - **Maturity Curve**: CRA-I recognizes that the needs of organizations vary depending on their stage of partnership maturity. For example, organizations starting their first partnership face different challenges than those seeking to deepen existing collaborations. CRA-I will work to articulate a "maturity curve" for academia-industry partnerships that reflects these evolving needs.
  - **Short- vs. Long-Term Research**: The nature of partnerships can differ based on the time horizon, with long-term research goals differing from short-term, applied research efforts. CRA-I aims to delineate these distinctions in their activities and events, recognizing that large companies may have more traditional R&D departments, while innovation within specific departments or startups may be more focused on faster time-to-market results.

- **University Connections**
  - **Access to Academic Networks**: CRA and CRA-I facilitates introductions and engagement with key academic contacts through their various committees, council, boards, and steering committees.
  - **Dual Appointments**: CRA-I recognizes that dual appointments can be very beneficial between academia and industry, which can lead to shared research results and a deeper collaboration over time. The CRA-I Dual Appointment Working Group will publish a comprehensive best practices white paper on this topic in February.

- **Industry-to-Industry Networking**
    - **Business- to-Business Opportunities**: CRA events create a unique environment for business-to-business networking, where companies can share insights and foster partnerships beyond their typical industry circles.

- **Government Connections**
    - **Shape the Future of Computing Industry Contributions to Grand Challenges**: Involvement in CRA/CRA-I provides industry the opportunity to define the grand challenges in computing research, contribute to Quadrennial Papers (which are delivered every four years to the incoming government administration), and recommend actions that shape the future of the computing field.
    - **Advocate for Federal Investment in Fundamental Research**: CRA's unique position representing both academic and industry research provides an important voice for both communities at the Federal level. CRA is able to augment industry's strengths by talking about how useful the federal investment in computing and IT research is to the future benefits of industry members.
    - **Participate in CRA's Bridge to Policy Makers**: CRA's deep knowledge and experience with the Federal research agencies is a useful resource for industry members to navigate the complexities of the federal research bureaucracy. CRA's Computing Community Consortium (CCC) and CRA Government Affairs hold the CCC Leadership in Science Policy Institute (LiSPI), intended to educate computing researchers on how science policy in the U.S. is formulated and how our government works.
    - **Benefit from CRA's Expertise at the Federal Level**: The CRA Office of Government Affairs closely tracks the budgetary and policy space that impacts researchers supported at the assorted Federal research agencies. The office's analysis is then shared widely in the community through the CRA Policy Blog, CRA's social media accounts, and other means.

Growing Talent / Access to Talent

- **Program Development and Growth Experience for students:** Through programs such as the CRA-Widening Participation (CRA-WP) Grad Cohort for IDEALS, Grad Cohort for Women, the Virtual Career Mentoring Workshop Series, and the Career Mentoring Workshop, CRA-WP invites industry to participate and engage. These programs foster community-building, support diverse talent through mentorship, and offer career development resources. Additionally, programs offered by CRA's Education Committee (CRA-E) such as the UR2PhD Program and the NSF CSGrad4US Fellowship and Mentoring Program seek to increase the diversity and number of individuals attaining PhDs in computing.
- **Curriculum Specialization:** The CRA Practitioner-to-Professor Survey (P2P), organized by CRA-I, facilitates actionable feedback to universities from industry professionals. It allows industry to help develop specialized curricula in emerging technology fields, ensuring students are prepared for future industry challenges.

- **Internship Programs**: CRA provides evidence-based guidance and data resources on establishing successful Research Experience for Undergraduates (REU) and internship programs, focusing on fostering future talent through applied research.
- **Job Board:** CRA's Career Center is one of the premier places to read and post position openings for computer scientists, computer engineers, and computing researchers.

Best (Breadth of) Practices for Research & Development

- **Effective DEI Practices**: As industry struggles with meaningful DEI (Diversity, Equity, and Inclusion) initiatives, CRA offers many opportunities for companies to learn and adopt DEI initiatives. One of these efforts is the 2024 CRA Report on *Minority Serving Institution Engagement in Computing Researc*h .
- **Research-Focused Best Practices:** In 2024, CRA released two best-practices documents: one on *Catalyzing Interdisciplinary Computing Research,* which provides actionable guidelines for researchers interested in adopting best practices throughout an interdisciplinary research project - from finding collaborators to dissemination; and another on *Researchers and Conference Submission and Review Policies to Foster Responsible Computing Research*, which outlines guidelines for ethical and responsible research practices in computing conferences.

Future Research Initiatives

- **Research Lab Management**: CRA and CRA-I plans development of documents on best practices for running successful industrial, national, or government research labs. These will include metrics for measuring success in applied research, fostering healthy internship programs, recruiting top talent into industrial research, supporting/defending the value of research to higher management, and developing successful methods for researchers working with engineers, product managers, and others across companies.
- **Research in a box**: CRA-I has a working group called "Research in a Box" whose goal is to put together a breadth-of-practice white paper with guidelines designed to help companies or industry professionals quickly engage in research activities without having to build the infrastructure. There will be a pre-packaged set of "tabs" which will include information on Intellectual Property (IP) Agreements, funding options, and access to data among other things that might be useful to companies.
- **Enterprise Cybersecurity & Cloud Storage Future:** Funded by the National Science Foundation's Technology, Innovation, and Partnerships (NSF TIP) Directorate, this CRA-I project will provide critical insights and recommendations to address challenges in enterprise cybersecurity and the future of cloud storage technologies. Reports will guide actionable next steps, including potential industry collaborations through consortiums and events.