

Date: February 23, 2023

To: All Interested Parties

From: Rebecca Silveston, ERVA Executive Director

Re: Request for Proposals – Program Evaluation

The Engineering Research Visioning Alliance (ERVA) seeks to engage a qualified program evaluation organization to develop an assessment instrument to evaluate the long- and short-term impacts of ERVA's efforts to identify and develop bold and transformative new engineering research directions and to catalyze the engineering community's pursuit of innovative, high-impact research that benefits society. Launched in April 2021, ERVA is a National Science Foundation (NSF) funded organization administered by the University Industry Demonstration Partnership, Inc. (UIDP) in partnership with the Big Ten Academic Alliance (BTAA) and the EPSCoR/IDeA Foundation (EIF).

Evaluation is a core component of ERVA's operation model, and this Request for Proposals (RFP) is part of ERVA's ongoing efforts to maximize its impact. ERVA leadership have recently revisited their evaluation needs and strategies, in response to findings from an NSF-led site visit. ERVA will conduct a multi-step process to identify an appropriate program evaluation organization:

1. A bidders information webinar will be held on March 16, 2023, to allow potential vendors to interact with the ERVA team and ask questions.
2. Vendors' full proposals should be submitted by April 6, 2023, for consideration.
3. The ERVA team will evaluate the proposals, reach out for further clarification within three weeks of submission.
4. The ERVA team will select a proposal and anticipate initiating collaboration with the winning bidder with a flexible start date in late May.

Please sign up for the bidders call at <https://www.ervacommunity.org/news/> .

Please submit proposals to Dr Rebecca Silveston, the Executive Director of ERVA via info@ervacommunity.org.

This RFP does not constitute a commitment, implied or otherwise, that ERVA will take procurement action in this matter. ERVA will not be responsible for any cost incurred in furnishing this information. ERVA is reaching out to the evaluation community to advise on the design, execution and evaluation that will help ERVA improve as we strive to meet the goals outlined below.

Specific areas of interest for this RFP are provided in the attachment.

ERVA invites all qualified and interested parties to submit a written response to this RFP to info@ervacommunity.org by April 6, 2023, by 5 pm US Eastern Time to receive full consideration.

ERVA Program Evaluation Services Request for Proposal

PURPOSE

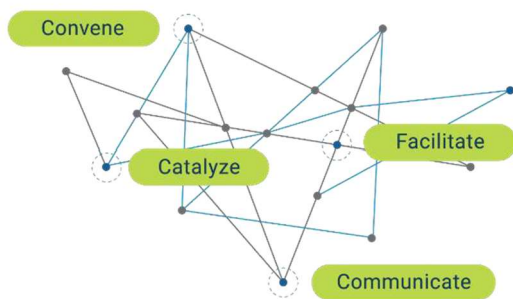
This Request for Proposal (RFP) is issued to identify a highly qualified external evaluator (individual or firm) to advise and collaborate with ERVA to develop and conduct a formative and summative evaluation and assessment of its events, outcomes, communications, and impacts for the remaining three years of the initial award.

ORGANIZATIONAL BACKGROUND

ERVA's mission is to identify and develop bold and transformative new engineering research directions and to catalyze the engineering community's pursuit of innovative, high-impact research that benefits society.

Launched in April 2021, ERVA is in the second year of its initial five-year award. Figure 1 below shows the ERVA process to accomplish its mission.

Figure 1.



ERVA convenes academic, industrial, and other stakeholders, representing all engineering disciplines in visioning event workshops to identify future research challenges and enables the engineering research community to speak with a unified voice. The key beneficiaries for ERVA's activities are expected to evolve from a nucleus of participants actively involved in ERVA events to the broader engineering community to society at large over time.

More specifically ERVA's goals are:

Goal I: Obtain and integrate input from all stakeholders with interest in engineering research, including academia, industry, professional societies and other nonprofits, government agencies, and the public to enable articulation of compelling research visions that align with national and global challenges.

- Create a process for the multidisciplinary engineering community, and its stakeholders, to collectively identify and prioritize future research challenges.
- Serve as a catalyst and enabler for the engineering community to identify new opportunities and priorities in engineering research that have the potential to address national and societal needs.
- Facilitate the generation of engineering research visions.

Goal II: Communicate coordinated information on the research visions and priorities in engineering research to the engineering community's stakeholders.

- Communicate the research visions and their importance to a wide range of stakeholders including the research community, and government and industry representatives, as well as more broadly to the public.

Goal III: Strengthen connectivity across the engineering community's diverse stakeholders and increase coordination among the engineering disciplinary communities.

- Cultivate relationships with other government agencies and government-supported efforts to broaden the ERVA community.
- Embrace all engineering fields, including emerging areas and areas overlapping with other disciplines.
- Engage new, diverse voices (both across disciplines and roles, including increased participation by women, students, and underrepresented groups).

The cooperative agreement with the NSF calls for an evaluation of ERVA events, outcomes, communications, and impact in the near-, mid- and long-term. The evaluation must include:

- Annual formative evaluations to assess project outcomes and provide feedback for project improvement.
- Evaluation instruments to assess 1) planned project activities; 2) work products; 3) stakeholder engagement; and 4) operating procedures.
- Evaluation instruments to assess impacts on 1) connectivity, coordination, and collaboration across stakeholder communities; 2) research directions, resource allocation, infrastructure development, policies, and programming; 3) awareness of the role of engineering in society.
- Interim (Year 3) and final summative evaluation to determine the degree of success in achieving organizational goals and impact in the areas described above.

Additional information about ERVA and its evaluation expectations are provided in the Appendix. ERVA currently collects primary data through postworkshop surveys and quantitative data from outward-facing forms on the ERVA website including recruiting [champions](#), visioning event [participants](#), [affiliates](#), and [ideas](#) for visioning event topics.

SCOPE OF SERVICES

The overall goal of the evaluation is to support continuous improvement by providing information that allows project leadership and primary stakeholders to determine progress toward programmatic goals, objectives, and desired results (outcomes and impact). ERVA is reaching out to the evaluation community to advise on the design, execution and evaluation program that connects the “Convene” and “Facilitate” activities in Figure 1 to the mission of communicating findings that catalyze follow on resources. ERVA is looking for an evaluation partner to help identify ERVA’s impact, from the initial core of affiliates and participants in the engineering community to society at large, over time and advise on approaches to expedite this impact.

ERVA requests responses that clearly demonstrate the proposer’s abilities to effectively engage stakeholders in the development and implementation of a theory-of-change-informed evaluation. The proposal will: (1) describe the vendor’s initial approach to address the tasks, services, and deliverables requested in the RFP; and (2) demonstrate the vendor’s capability to implement and manage the evaluation as proposed. The submitted proposals will be rated against these two technical components and the proposed budget.

TASKS, SERVICES AND DELIVERABLES

Evaluation Design. The plan for ongoing, formative evaluation to support continuous improvement and summative evaluation assessing the project’s overall success and impact against a shared understanding of a theory of change that aligns with ERVA’s goals. Design should include the initial evaluation questions needed to interrogate the theory of change, the process to operationalize indicators regarding relevant contextual factors, inputs, processes, outputs, outcomes, and impact, and appropriate methods for data collection and analysis.

Data Collection, Analysis, & Visualization. Refine current evaluation metrics and analytic techniques, including multiple primary methods such as event observation, interviews, surveys. Assure that structured and unstructured data are reliably and systematically captured. May include social network, bibliometric, and other analyses as needed to implement the proposed plan. In addition, advising and integrating internal bibliometric and other data analyses.

Interpretation, Reporting, & Use. Report progress and analysis of ERVA activities towards the goals in semi-annual virtual and or in-person meetings with the ERVA Standing Council, and Advisory Board, and quarterly virtual meetings with the Executive Committee. Provide data and interpretive results to ERVA staff for inclusion in a comprehensive annual report.

Management Plan. The policies and practices suggested to assure data quality and utility, timely deliverables, responsiveness to shifting client context and needs. The leadership and staff proposed to implement the evaluation as proposed.

QUALIFICATIONS AND REQUIREMENTS

Responding organizations should provide information (examples of prior work and the resumes/ CVs of key personnel) that demonstrate capabilities to implement and manage the ERVA evaluation as proposed:

- Significant content experience evaluating initiatives similar in scope and scale to ERVA concerning:

- Community building
- Shifting perceptions of a field
- Identifying achievable, trackable impacts of the non-profit's activities to report baseline and distal outcomes validly and reliably.
- Comprehensive technical skills and prior work in:
 - Supporting the development of theory of change informed evaluation processes
 - Qualitative and quantitative methods, including observation, interviewing, survey design, survey sampling, use of secondary data, and statistical analysis.
- Comprehensive management skills.
 - Ability to work remotely and receive source data electronically.
 - Ability to meet deadlines and tight timelines.
 - Appropriate levels of staff and availability to participate in regularly scheduled meetings, via conference call, videoconferencing, or in person as required.
 - Preparation of written reports to be included in ERVA's annual reports.
 - Quality assurance.
 - Strong oral and written communication skills.

While not a minimum requirement, preference will be given to organizations with prior experience working with the National Science Foundation.

Responding organizations must provide at least two references, with at least one from a senior executive or programmatic management level position.

Responders should provide an estimated budget for the remaining three (3) years of the current award period. The budget is a deciding factor and should not exceed \$175,000/year.

ADDITIONAL INFORMATION AND DEADLINES

ERVA reserves the right to modify this RFP and change this schedule of RFP events, as it deems necessary.

ERVA will schedule a bidder's information call on March 16, 2023, at 1 pm Eastern to answer questions that any proposer may have regarding this RFP. Please contact ERVA at info@ervacommunity.org if you wish to participate in this bidder's call or sign up directly on ERVA website (<https://www.ervacommunity.org/news/>) for the bidders' information call. Questions received prior to this date will be answered on this call.

Deadline for receipt of proposals: April 6, 2023, 5 PM EST.

Submission information: Proposals should be submitted electronically as a single PDF document to info@uidp.net.

Selection Process: ERVA staff and PIs will review proposals, conduct interviews, and select the evaluator. The interview process is expected to begin shortly after the receipt for proposal date, with notification of selection within three weeks, for a flexible start date in late May 2023.

Contact for Questions: ERVA will consider only written inquiries and requests for clarification of the content of this RFP received from potential proposers. Inquiries should be submitted to

Appendix

ERVA EVALUATION AND ASSESSMENT (E&A)

An external evaluator will be retained to design evaluation instruments and implement a comprehensive, customized evaluation plan, in consultation with the Principal Investigators (PIs) on the award, the Advisory Council, and the ERVA staff. This includes delineating project roles and responsibilities, creating a shared understanding of ERVA's theory of change, defining the evaluation approach, planning, and designing, executing the evaluation, analyzing the evaluation, and reporting the findings. ERVA's activities require both formative evaluation — to assess project outcomes and provide feedback for project improvement — and summative evaluation to determine the degree of success in achieving project goals. The evaluator will use multiple evaluation research methods drawing on both qualitative and quantitative methodologies. The evaluator team will attend all the workshops and collect data via surveys and interviews. Post-workshop surveys will be conducted and reported.

Examples of the guiding evaluation questions with the associated milestones, metrics, and qualitative indicators to assess progress and impact follow. The evaluator will appropriately refine milestones, metrics, and indicators during the strategic planning meeting to develop a detailed timeline for data collection, analysis, and reporting for NSF approval. Data collected each year will serve as a baseline for measuring progress to be measured and reported informally every quarter and formally on an annual basis.

EXAMPLES OF EVALUATION PLAN QUESTIONS:

Please note that the following are not meant to be definitive plan questions. Responding organizations are encouraged to amend, alter, and offer unique thinking for assessments, measurements, and metrics that fit a shared vision of the theory of change for the ERVA activities and will comprehensively enable ERVA leadership to assess its impact and engage in continuous improvement.

- I. To what extent have project initiatives been implemented?
Metrics: Status of milestones; participant perceptions of implementation, strengths, areas of improvement, assessment of impact.

- II. What are the project's specific outcomes and impacts regarding:

Establishment of Committees: Standing Council and Advisory Board:
Metrics: Well-balanced representation from principals, disciplines, and sectors (academia, industry, government, non-profit) in the nominations list to the final participant's list from the available engineering audience; succession planning for representatives on each governing body.

Visioning events:
Metrics: Nascency of the event themes, diversity of workshop locations/hosting organizations, number of participants; demographic data; diversity; industry partnerships; participant changes in knowledge, skills, and attitudes as measured during and post workshops. How has this

activity helped to build the community of engineers? Have new collaborations resulted? How have workshops influenced professional societies? Have workshop topics translated into technical sessions, symposia, working groups, or stand-alone topical conferences? How effective is the ERVA rapid response approach? What is the time from ideation in the committee to the workshop to the published report to the release of a Program Solicitation by government or private enterprise?

Communications Networking:

Metrics: Brand awareness with stakeholder community, participant perceptions regarding partnerships; increased number of publications, conference presentations, and workshops; number and locations of authors citing project publications; citation analysis; social media analytics; are societies capturing ERVA workshop reports in their libraries and websites? Are tech transfer offices aware of ERVA-related emerging technologies and innovations?

III. Broader impacts on engineering research

Metrics: Funding for research directions that both address and have an impact on a national or societal need. For example; Number of research grants (single PI, interdisciplinary teams, multi-institutional teams, university-industry teams); funding sources: NSF, DOE, DOD, FDA, DARPA, NIH, private foundations, industry grants, [demographics must be tracked], awards (recognition) to people and projects, best paper awards. Another example is impact on Congressional actions, e.g., SUCCESS Act of 2018, Stronger Patents Act of 2019.

IV. Innovation:

Metrics: invention disclosures filed, patent applications filed, published patents, awarded patents, startups: funding sources for innovation (angel, VC, accelerator awards, private equity).