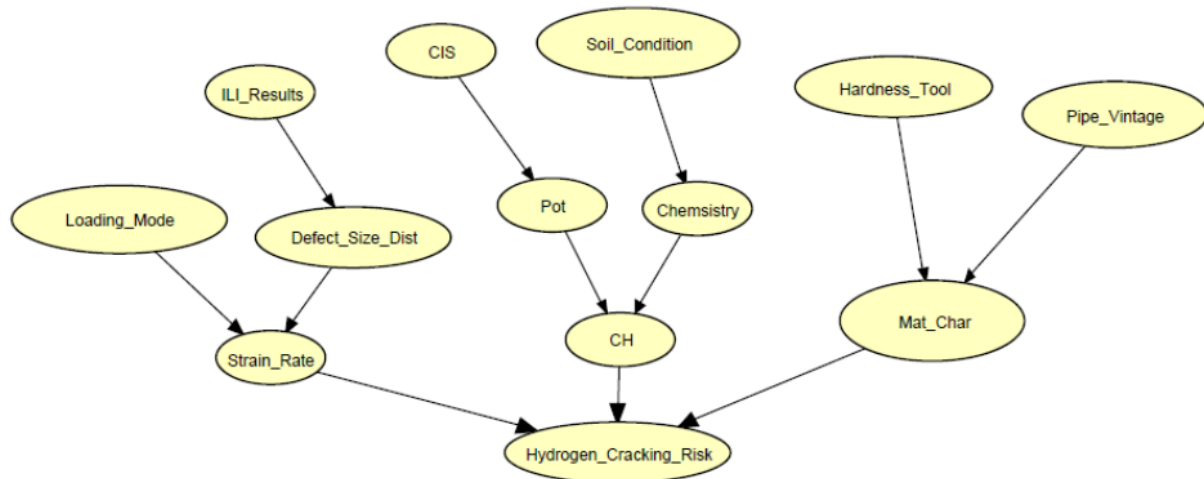


1. The overall idea was that there have been some recent failures of pipelines associated with hard spots in long seam welds of pipes due to **excess CP**, which generates high concentration of **hydrogen** and leads to **embrittlement**. There have also been failures in these hard spots due to **lack of CP** generating corrosion defects which act as starter cracks which can then propagate due to hydrogen generation at open circuit potentials. The root cause of these problems is **the lack of quantitative understanding in the optimal level of CP**, and the interactions between the materials hardness, susceptibility to hydrogen concentrations, strain rate, and stress corrosion cracking. Therefore, we believe it is critical to couple defect detection from inspections, as well as identify hard spots from magnetic flux leakage tools and couple the two to determine the optimum CP level based on the hardness levels. By integrating controlled experiments and advanced modeling such as Bayesian Network, we can develop a framework to establish correlation between different critical factors highly relevant to pipeline failures (example shown in the figure below), thereby allowing us to identify the limits of protections and the potential approaches for mitigation.



Do you think this is something of interest and relevant to Topic 2 of this year? We can schedule a Zoom call to chat about more details if you like.

Answer: You are welcome to submit a proposal as long as you meet all of the procedures stated in the FY 2023 Notice of Funding Opportunity (NOFO) announcement. The proposals will be reviewed and evaluated in accordance with the requirements identified in the NOFO.

2. I wonder if I can submit a proposal about the influence of poor interaction between field personnel on underground damages to this call.

Answer: Please review the FY 2023 Notice of funding opportunity (NOFO) announcement. The proposals submitted will be evaluated based on the relevance to the topics identified in the NOFO.

3. One of issues that got my attention is the project cost up to \$1,000,000. Previously, it was capped at \$300,000, with 20% match. Is there a norm for the project budget that we should stay within in planning our activities?

Answer: The increased award ceiling may encourage partnerships among several universities and industry partners for research on more challenging topics that normally require significant investment.

In addition, as stated in the NOFO: Section C. 2: Cost Sharing states that "Pursuant to § 22(b)(2)(C)(ii) of the PIPES Act of 2016 (Pub. L. 114–183), there is a mandatory minimum 20 percent cost-sharing requirement for CAAP agreements. The federal government will fund no more than 80 percent of the total cost of each approved project up to \$1,000,000. Firm letters of commitment for resource sharing must be provided with the application. Applications without resource-sharing commitment letters will not be reviewed or considered for award. See Section D.2 for additional information regarding budget/cost applications."

4. The call states that "students proposed to be involved with the research agreement must be U.S. citizens, permanent residents, or possess current visas that will allow them to remain in the country long enough to complete the research project." Does that mean that all students need to remain on the project for the duration of the 2-3 year award? Meaning that senior students (who are expected to graduate within 1-2 years) are not eligible to work on the projects?

Answer: The research scope must be executed by undergraduate, graduate, and/or Ph.D. research students. In addition, the students must remain on the contract for the project performance period (up to 3 years for CAAP). If the student graduates during the project, then he/she no longer counts as a "student". The students involved with the research agreement must be U.S. citizens, permanent residents, or possess current visas that will allow them to remain in the country long enough to complete the research project. Please see the NOFO Section C.3 - Minimum Requirement for more information on this question.

5. The call states that "Further, while the collegiate institutions are likely unfamiliar with pipeline industry companies, trade associations, or principal contacts, PHMSA will advise and offer collaborative communication with key pipeline contacts to aid in the successful completion of the research project." Is there an opportunity to get connected with these companies at the proposal stage or will these interactions occur only post-award?

Answer: PHMSA encourages researchers to reach out to various vendors and stakeholders on research gap ideas and innovation on pipeline safety related matters. During post award, collaborative communication with other pipeline entities will aid in the successful completion of the research project.

6. I see that the research scope must be executed by students, and not Faculty/staff. Are postdoctoral associates allowed to contribute to the execution of the research scope alongside the students? Or do they count as Institutional faculty/staff in the context of this call?

Answer: The postdoctoral associates are allowed to contribute to the execution of the research scope if they count as students, someone who is enrolled in an undergraduate and/or graduate educational program at a credited educational institution. However, if they count as institutional faculty/staff, they will design the scope but won't participate in the research. Please see the NOFO: Section C.3: Minimum Requirement, part 3 which states that "Institution faculty/staff should design the scope and oversee student execution of the scope".

7. It is legally permissible for an eligible CAAP applicant to partner with a private foreign entity?

Answer: Section C.1 of the CAAP NOFO states that "[a]pplicants must be nonprofit institutions of higher education located either in the U.S. or a U.S. territory or possession." The NOFO further states that PHMSA will consider an application from an eligible entity "that partners with other eligible recipients, the pipeline industry, and/or with any private organization . . ." (emphasis added). The qualifying statement—that the applicant must be "located in the U.S. or a U.S. territory or possession"—applies only to the applicant itself and not to any pipeline industry or private entities the applicant partners with.

Any issues that arise involving work visas, international travel, and similar issues will be the responsibility of the grant recipient to resolve. If the applicant chooses to partner with a non-U.S. entity, that should be the applicant's responsibility, and PHMSA should not have any role there.

Kandi's Response: Thank you for your email and your interest in PHMSA's CAAP. Please submit any technical questions through the procedures identified in the CAAP Notice of Funding Opportunity.