

# **Microelectronics Commons California-Pacific-Northwest AI Hardware Hub Call for White Papers FY 2024**

The California-Pacific-Northwest AI Hardware Hub (Northwest-AI-Hub) is now accepting white papers in response to the [Microelectronics Commons Call for Projects](#) for FY 2024. Interested parties for the [AI Hardware](#) technology area are welcome to submit. The following information only applies to the Northwest-AI-Hub; to collaborate with other Microelectronics Commons Hubs, please refer to their separate calls.

**Who Should Submit:** Proposers who wish to use the Northwest-AI-Hub capabilities (see “Hub Technical Resources” below) and have projects that align with the following AI hardware topics (see [Desired Capabilities document](#)) are encouraged to submit:

- Topic 1: Heterogeneous Integration of AI-Specialized Chiplets
- Topic 2: Advances in Novel Materials and Fabrication Processes for Complementary Metal-Oxide-Semiconductor (CMOS)-Level Cointegration (CMOS with Emerging Technologies [CMOS +X])
- Topic 3: Sensor and Artificial Intelligence (AI) Fusion
- Topic 4: In-Hardware Learning
- Topic 5: Specialized Hardware for Combinatorial Optimization
- Topic 6: Artificial Intelligence (AI) Hardware for Extreme Environments
- Topic 7: Photonic Artificial Intelligence (AI) Compute

**Eligibility:** Anyone is welcome to submit white papers. However, all participating organizations on a *selected* white paper must become active [Northwest-AI-Hub members](#) at the time of full proposal submission to DoD.

## **Timeline**

**January 14, 2024:** white papers due to Northwest-AI-Hub at 5 p.m. pacific time

**January 26, 2024:** target date for selection result announcement. Proposers for both selected and non-selected white papers will be notified.

**February 13, 2024:** target date for full proposal draft completion

**February 20, 2024:** full proposals finalized for lead organization review

**February 28, 2024:** proposals submitted to government sponsor

**Related White Papers:** If a submitted white paper is related to or linked with another white paper being submitted to the Northwest-AI-Hub, please clearly identify this so we can evaluate the white papers together.

**Conflict of Interest:** White papers and the subsequent full proposals (if invited) submitted to the Northwest-AI-Hub should be unique and not submitted to other Hubs. Any overlap in project ideas must be disclosed in the submission process.

**Format:** Each white paper should be about a single project and include a 2-page narrative and a 1-page milestone table, key personnel, and budget table. Submissions must use the provided template downloadable from our website. Please do not submit additional documents with the white paper.

**Budget:** Although there is no minimum or maximum budget limit, we expect that the first-year budget per project should be around \$3M-\$5M, although lower budget amounts will be allowed. Total project duration should be no more than 3 years.

**Submission Method:** Please submit the white paper to the submission portal at the [Hub website](#).

**Review Process:** All received white papers will first go through administrative review to ensure completeness and relevance to the technology area. Then, members of the Northwest-AI-Hub Executive Committee will screen and recommend white papers to the ad hoc review committee, which will then review and provide feedback to the Executive Committee. Final selections will be based on technical merit and alignment with the Northwest-AI-Hub as outlined in the “Review Criteria” section of this document. Proposers may be contacted at any point during the review process to provide additional information or participate in two-way discussions with the Northwest-AI-Hub. Strong competition should be expected. Based on the reviewer recommendations, multiple white papers may be considered to be combined for one full proposal. Proposers of selected white papers will be notified and asked to participate in developing their white paper into a full proposal according to the “Timeline” section of this document.

**Statement on Fair Review and Diverse Participation:** It is the goal of the Northwest-AI-Hub to maintain fairness in the white paper review process and selection on the basis of technical merit and alignment with the Northwest-AI-Hub mission and resources. All submissions that are complete and relevant to the AI hardware technology area will be evaluated by both the Executive Committee and an ad hoc review committee composed of Northwest-AI-Hub advisory board members and additional domain experts. To ensure fairness, the same review criteria will apply to all white papers. The Northwest-AI-Hub aims to diversify the number and type of organizations that participate in projects, and encourages submissions from all organizations.

### **Review Criteria**

- Technical Merit
  - Responsiveness to [DoD-desired capabilities](#)

- Readiness to fulfill the desired end-state and success criteria (collaborations between organizations are encouraged, especially when a single organization cannot fully address all end-state and success criteria. For partial solutions, please clearly identify the gap and explain what is needed from the Northwest-AI-Hub to achieve success for the full solution.)
- Technical innovation and potential impact
- Sufficient background and preliminary results to demonstrate proper entering TRL/MRL.
- Approach and chance of success
- Alignment with the Northwest-AI-Hub
  - Utilization of Northwest-AI-Hub services and capabilities
  - Other rationale for performing via the Northwest-AI-Hub
  - Appropriate budget

### **Hub Technical Resources**

- Stanford University: [Stanford Nanofabrication Facility \(SNF\)](#) and the [Stanford Nano Shared Facilities \(SNSF\)](#)
- University of California, Berkeley: [UC Berkeley Marvell Nanolab](#)
- University of California, Davis: [Center for Nano-MicroManufacturing](#)
- University of Washington: [Washington Nanofabrication Facility](#)
- Western Digital Corporation: [Researching at the Nanoscale](#)

In addition, there are numerous Hub partners and members, including service providers, foundries, and manufacturers, from design through packaging. New partners are welcome, and must become Hub members if participating in final project submissions.

**Contact Information:** Please send all questions to [pacific-nw-ai-hub@stanford.edu](mailto:pacific-nw-ai-hub@stanford.edu).