JCATI 2024-25 Request for Proposals
Due Date: Friday, March 1, 5 PM PST

New for FY25: eligibility update and <u>optional</u> pre-proposal review

<u>General Information</u>

Program Summary

The Joint Center for Aerospace Technology Innovation ([JCATI](#)) is an aerospace industry economic development program funded by the WA legislature. **JCATI project award funds pay for industry access to WA public university engineering expertise.** <u>Preferred industry projects are Technology Readiness Level (TRL) 4-7 technology issues.</u> JCATI's mandate is to leverage the state's engineering proficiency to keep WA aerospace globally competitive.

<u>How JCATI works</u>:

- A WA aerospace company identifies a technical pain point and finds appropriate expertise in a WA public university School or College of Engineering.
- Faculty submit a JCATI project application describing how their expertise can solve the issue and how results will transfer back to the industry partner.
- Selected projects receive funding which primarily supports WA engineering students working on the technology solution.
- The industry partner provides project support (in-kind and/or funding) necessary for project completion. Successful projects are well scoped with a clear transition plan for technology back to the industry partner within 1 yr. of funding ending.

WA aerospace companies of all sizes use JCATI to solve short term TRL 4-7 technical issues critical to their operation. Furthermore, JCATI projects provide industry with direct WA engineering student interaction. As such, JCATI can significantly contribute to WA aerospace company competitiveness in terms of technology transitions as well as workforce development and recruitment.

JCATI funds are not meant to be long-term grants, industry sponsored research, or basic research support. Projects must have a company transition plan. JCATI projects are not capstones but projects with real deliverables.

Interested industry partners can contact WA public university engineering faculty directly or can ask the JCATI Program Manager to help identify potential academic partners. **If an industry partner requires matchmaking help,** contact the Program Manager <u>no later than January 19, 2024</u>.

The JCATI program is committed to diversity, equity, and inclusion for all project participants. We envision JCATI projects as opportunities to become part of the aerospace field regardless of gender identity, race, and ethnicity. A diverse aerospace workforce enhances collaboration and the creation of new ideas for the aerospace industry, our universities, and Washington State.

RFP virtual office hours: February 8, 2024, 3-4:30 pm. No meeting agenda, just a Zoom session to ask RFP related questions. Registration required.

We **strongly encourage** applicants to review the Best Practices PowerPoint during proposal development. Application cover sheet, budget form, FAQ, Best Practices presentation, and application checklist can be found on the JCATI funding page.

Program Contact: Beth Hacker, JCATI Program Manager, bhacker@uw.edu.

Award Information

- Estimated number of awards for 2024-25: 12-15
- Maximum budget request: $120,000 ($115,000 for project + optional $5000 for Undergraduate Scholars Program)
- For 2024-25, JCATI anticipates ~$1.3M in funding.
- Project award period is 1 year: July 1, 2024, to June 30, 2025.
- All JCATI funds must be spent by June 30, 2025. No cost extensions are not allowed. Any unspent funds are returned to the state via the UW.
- JCATI funds are not subject to indirect rates.
- Awardees are required to present projects at the April 2025 JCATI symposium in Seattle (date TBD).
- A final report including information from both academic and industry partners is due by July 18, 2025.
- Applicants can request an additional $5k to meaningfully involve undergraduates as part of the JCATI Undergraduate Scholars Program (USP). This USP supplement is optional and is in addition to the project award amount. Directions in Section III.D.

Eligibility Requirements: please read closely.

- Applicant Organization: Eligible applicant organizations are Central Washington University, Eastern Washington University, Evergreen State College, University of Washington, Washington State University and Western Washington University.
- Principal Investigator**:** The principal investigator (PI) and all co-investigators must be employed by the applicant organization's College or School of Engineering. Principal investigators must meet their employer's requirements for such status.

- ***NEW for FY25*** <u>UW and WSU applicants</u>: If you have received 3 years of JCATI funding as a PI (including FY24), we encourage you to skip FY25 before submitting a new JCATI proposal. PIs who have received 3 JCATI grants will receive lower priority for funding consideration unless the project is in a new technical area or involves a new WA industry partner. These applicants also need to demonstrate previous transition success.
    - We invite multiple year award winners to leverage JCATI project data by applying for different types of funding including industry sponsored research. JCATI's purpose is to transition technology and is not a basic research substitute. We encourage these awardees to mentor junior faculty members to apply for JCATI projects.
- For UW Applicants:
    - UW does not allow postdocs to be PIs.
    - Applied Physics Laboratory (APL) researchers and staff are not eligible to apply.

- Industry Partners: **<u>The primary aerospace industry partner must have a WA presence. The majority of project work and project impact must occur in WA.</u>** Organizations outside WA may be permissible if the above conditions are met. JCATI is funded by the WA Legislature, therefore all projects must directly benefit the state and its constituents.
- JCATI only funds one proposal per PI.

Management and Ownership of Intellectual Property

- JCATI funded projects have successfully transitioned technology to aerospace businesses of all sizes. Each academic institution has intellectual property mechanisms in place including UW and WSU licensing options. We **<u>strongly advise</u>** you and your industry partner discuss your project with the appropriate contact below:
    - University of Washington: Erin Schwartz (erinlisa@uw.edu) Senior Director, Corporate & Foundation Relations
    - Washington State University: Brian Kraft (bkraft@wsu.edu) Assistant VP, Office of Research Advancement & Partnerships
    - Western Washington University: David Patrick (david.patrick@wwu.edu) Interim Vice Provost for Research
- Proposal abstracts are not released without academic and industry partner permission.

Types of Supported Projects

- **<u>Projects must be WA State aerospace industry related with project impact occurring in WA</u>**

    JCATI interprets aerospace broadly and relevant areas include <u>but are not limited to</u>:
    - AI/Machine Learning: methods and software for modeling and design of safe and efficient aerospace systems

- o Advanced air mobility: propulsion, infrastructure, planning, network models, materials
- o Aerospace materials: metals, composites, 3D printed, novel manufacturing processes
- o Aerospace propulsion: Engine efficiency and modernization, battery technologies, clean and sustainable propulsion technologies
- o Aerospace sustainability: composite recycling, environmentally friendly manufacturing techniques, sustainable aviation fuels, hydrogen, carbon sequestration
- o Aircraft configuration design: aerodynamics, distributed propulsion/sensing/actuation, aircraft health monitoring systems, digital twins, eVTOL
- o Aircraft or spacecraft power systems: power distribution systems; hybrid power generation and management
- o Airport transportation modernization: ground transportation, baggage handling, air traffic management, air transportation safety, sustainable aviation, cargo distribution, touchless technologies, safe use of robotics and autonomy
- o Communications systems: aircraft, satellite/space communication
- o Controls and autonomy: aircraft or space systems
- o Human-machine interfaces: pilot training, display design, human fatigue modeling, robotic interface
- o Manufacturing and production innovation: robotics, additive manufacturing, augmented/virtual reality
- o Safety technology or diagnostic tools for passengers and/or aerospace workers
- o Software: machine learning, cybersecurity, AI for aerospace applications
- o Space: spacecraft, CubeSats, imaging, environmental monitoring and space-borne sensing, situational awareness, resource utilization, collision avoidance, debris removal
- o UAV systems: navigation, power, materials, autonomy, software

- Selection preference is for projects addressing an industry pain point with high probability of technology transitioning to the industry partner within 1 year of funding conclusion, preferably sooner. JCATI funding is not appropriate for basic research or long-term projects.
- Industry partners must provide project support (cash and/or in-kind) which can include materials, consulting time, machinery access, computing time, testing facilities, etc. Applications must include an industry letter documenting the technology need and support amount. Industry partners are encouraged to find ways to involve students in the technology transition. If the project is funded, the industry partner is expected at project conclusion to provide a summary letter documenting support level and technology transition back to the company. Industry failure to deliver support or communicate the transition may affect future project funding.
- The academic partner uses JCATI funds for student salaries, equipment, laboratory fees, materials, etc. All expenditures must follow fiscal best practices set by their institution.

NEW for FY25: <u>Optional</u> Narrative Pre-review

To help applicants create the strongest proposals and outcomes, JCATI will pilot an **optional** pre-proposal narrative review. The goal is clear and concise proposals for reviewers. Pre-review focuses on grantsmanship and RFP structural aspects and <u>not</u> the project's science, scope, budget, or fundability. Note this pre-review is separate from full proposal review and scoring. Comments are non-binding, and you are free to choose if you want to incorporate them into your final proposal.

Each applicant can submit only one draft narrative for pre-review. Your draft should not include project budget, industry letters, or cover page.

Optional pre-review submissions: upload your PDF draft narrative into this [Google form](#) until Friday, January 12, 2024. Only pre-proposals submitted this way will be considered. You will receive brief feedback related to meeting the RFP intent.

JCATI Proposal Preparation and Submission Instructions

- Use Arial 10-point font size and 1" margins. Figure captions can use smaller font size.
- Use plain language understandable to a lay audience.
- Application size limit=4 MB
- **UW applicants: JCATI applications do not require an eGC1. Do not submit applications to OSP!**
- Applicants must include disclosures of any financial or tech transfer interests held in industry partners.
- <u>UW Aero & Astro applicants:</u> your project budget must be completed and signed off by A&A grant staff no later than 5 PM Friday Feb 23.

Submit the full application no later than Friday, March 1, 2024, at 5:00 PM (PST). Upload your application PDF using the large orange "Submit Applications Here" button found on the [JCATI funding page](#). Submissions are time stamped upon receipt and late proposals will not be reviewed. **Only proposals submitted via the JCATI website will be accepted**. The JCATI Program Manager confirms application receipt. Do not send your proposal to the JCATI Program Manager.

The JCATI proposal includes the following elements <u>in order</u>:

I. Application Cover Sheet

Complete the 2024 Cover Sheet found on the [JCATI funding page](#) under Application Forms.

II. Non-Technical Abstract (1-page, 150-word limit. Text only, no figures or diagrams)

Clearly and succinctly state the project objective(s), deliverable(s) and impact in accordance with JCATI's purpose. Note the most common reviewer complaint is "I can't tell what industry problem needs solving."

III. Narrative (5 single-spaced pages total for sections A-C)

Direct the narrative to an educated lay audience outside your field. All figures are included within the page limit. Provide sufficient information for reviewers to evaluate the scientific merit and benefit to WA aerospace industry independent of any other document. Note that references are listed in Section IV. **Include the following sections in order, each with the section title.**

A. Technical Merit and Project Feasibility (2 pages total for sections A.1-A.2)

A.1. Technical Background and Approach
Clearly describe your industry partner's pain point and technology issue. Expand on the abstract, providing technical details to the problem. **Include the current TRL level and why it was chosen**. Describe how the academic partner's expertise addresses the industry partner's technology issue. Explain how the proposed innovation affects the industry partner's manufacturing processes and/or market. If the project is a continuation from a previous year, explain why another year of JCATI funding is necessary.

A.2. Objectives, Outcomes, Deliverables
Clearly list specific project objectives and deliverables as required by the industry partner. How will you solve your industry partner's technology problem in the 1-year funding period?

NOTE: limit of 2 pages total for sections A.1.-A.2. Succinctly explain why this JCATI project is important for your industry partner and why you are the one to solve it!

B. Industry Partnership and Transition Plan

B.1. Industry Partner In-kind Support
Describe the type and cash equivalent value of industry project in-kind support. Support can be cash, materials, consulting time, computing time, machining time, etc. At the end of the project period, the JCATI Program Manager verifies support delivery with the industry contact.

B.2. Partners and Roles
Describe how each partner will manage their part of the project.
Faculty: how will you contribute to project success? Student involvement, timeline adherence, budget, etc.
Industry: how will you contribute to project success? Provide necessary data, project meetings, validation, factory visits, tech staff involvement, etc. Include the name(s) of the industry lead(s).

B.3. Technology Transition Plan
Provide a project plan and/or timeline written with the industry partner describing project milestones, academic partner exit, and project technology hand off to your industry partner. How will the deliverables in Section A.2. move from your academic lab back to the industry partner within 1 year of JCATI funding ending (ideally sooner)?

C. WA Economic and Educational Impact

C.1. Business Opportunities and Job Benefits
Describe how solving the pain point benefits the industry partner. Include any measurable job creation or fiscal benefits resulting from the technology. Is there a near term WA business opportunity the technology opens or improves?

C.2. Educational, Internship and Job Opportunities
Describe how the JCATI project benefits WA engineering students working on the project. This can be through internships, job opportunities, mentoring, soft skills development, networking, community or student outreach, etc.

OPTIONAL Section D: Undergraduate Scholars Program (1-page limit, $5000 max)
The Undergraduate Scholars Program (USP) intends to create meaningful opportunities for undergraduate students-including historically underrepresented groups-to enter and thrive in the engineering and research community. Strong applications will clearly indicate how the proposal expands access and participation for all students and contributes to a well-rounded, skilled, and diverse engineering workforce. Student participation can be for a defined period (summer, part of academic year) or over the entire project. Funds must be spent by June 30, 2025.

If applying for USP funds, provide the following information:
- Describe your recruitment and selection of USP students.
- Describe the role USP students will have in your project and how the additional funding will be used.

IV. References and Optional Reviewer Suggestions (1-page limit)
1. References-List all references from Sections A-C here.
2. Optional Reviewer Suggestions: Provide reviewer names and contact information.

V. Industry Letters of Support

Each industry partner provides a letter of support (LOS) outlining project support and involvement. At project end, industry partners must verify the delivered support amount. Failure to deliver the proposed level of partner support is to be considered during future project application review. LOS should include the following:

- Name of industry contact and project role
- Type of in-kind support and its cash equivalent value. Support may be in the form of, but not limited to cash, materials, facility access, testing services, consulting time, student internships.
- Brief description of how technology will be transitioned back into the company for use.

- If applicable, <u>brief</u> description of milestones or decision points for support distribution.

VI. Biosketch (2-page limit each for PI/Co-PI)

Maximum 2 pages each for PI/Co-PI. Create an abbreviated biosketch using only the following NSF sections:

- Professional preparation: undergraduate and graduate education, postdoctoral training
- Appointments: in reverse chronological order list academic or professional for the last 10 years
- Products: up to 5 products related to expertise required for the JCATI project. Products can include publications, patents, data sets, software, startups, etc.

VII. Budget and Justification

- Maximum budget request: $120,000. $115,000 max for project only plus optional $5000 for Undergraduate Scholars Program (if the PI completed the optional Narrative Section D).
- Use the budget form found under Application Forms on the <u>JCATI funding page</u>. Include a budget justification briefly describing charges under each heading. The budget form must be signed by both the PI and departmental grants staff.
- JCATI funded projects <u>do not</u> allow Facilities and Administrative costs (indirects/overhead).
- Each project has only one PI and one budget number. Student and postdoc FTE cannot be split between JCATI funded projects.
- Carry forward is not allowed with JCATI projects. Budget deficits must be resolved by the end of the project period. PIs are strongly encouraged to budget to their expected level of expenditure to avoid unspent funds. Any unspent award funds must be returned to the state through the UW.

- <u>A. Senior personnel:</u>
  - Faculty can draw FTE from only one JCATI project. If a funded PI has FTE on a different JCATI funded project, the PI must pick which project to draw salary from.
  - <u>Total</u> tenure track faculty FTE is limited to 1.0-month summer salary. Research faculty may request up to 3 months' salary.
- <u>B. Other Personnel:</u>
  - Graduate students listed on JCATI projects receive tuition waivers <u>except</u> for UW Mechanical Engineering Master's students taking PCE courses. PCE does not waive tuition for students on JCATI projects. If one of your UW ME students is in this program, you must budget for their tuition.
  - We encourage faculty to involve grad students from historically underrepresented groups.
- <u>C. Fringe Benefits</u>
  - Use the appropriate benefits load rates for project personnel.

- D. Equipment:
  - o Include quotes for any equipment over $5000 and a description in the budget justification on why the equipment is needed.
  - o JCATI funds cannot be used for foreign transactions.
  - o All project purchases must follow the procurement rules set by their institution.
- E. Travel:
  - o JCATI funds are only for US travel. Foreign travel is not allowed.
  - o The 2025 symposium is planned for Seattle (date TBD). The PI should include $750 for their symposium travel and lodging. JCATI pays for student symposium travel/lodging costs.
  - o Funds are intended for travel to industry partner facilities for meetings, onsite testing, etc.
- F. Other Direct Costs
  - o Include costs for materials, supplies, fabrication and other project services.

- G. USP Funds (optional)
  - o If you completed optional Section D, you can request up to $5000 additional funds. If your project is funded, work with your grant manager on undergraduate hiring details.

Submitting your proposal

Upload your application PDF using the large orange "Submit Applications Here" button found on the JCATI funding page. Submissions are time stamped upon receipt and late proposals will not be reviewed.
DO:
- • Complete the proposal cover sheet with appropriate signatures.
- • Assemble sections in order into one PDF for upload and check that you have the correct version.
- • Are you under the file size limit?
- • Determine who submits the proposal: you? Grant manager? Student?
- • Use the RFP checklist to make sure you haven't forgotten anything.

DON'T:
- • Wait until the last minute. Proposals are time stamped upon receipt in the system, not when you submit them! There is always a lag time!
- • Email your proposal to the Program Manager. Only proposals submitted via the JCATI website are reviewed.
- • Ask the Program Manager if everything looks ok. We don't provide proposal input or notify applicants of missing sections or errors.

NOTE: The JCATI website creates an automated email acknowledging proposal submission. Additionally, the Program Manager notifies every PI verifying application receipt.

Proposal Review Process

- • JCATI proposal reviewers are subject matter experts and sign confidentiality agreements to ensure proprietary proposal information is undisclosed.

- The JCATI Board of Directors discuss reviewer scores and comments as a part of their final project selection process.
- Proprietary information is kept confidential. When award selections are announced and JCATI funds committed, project name, PI and industry partners are listed on the JCATI website. Information from unfunded applications is not made public unless authorized.

Award Terms and Conditions

- Award decisions cannot be appealed. No award is final until a grant agreement has been executed. The applicant's academic institution is legally responsible for authorizing and submitting proposals, administering the grant, and disbursing JCATI funding.
- If the award differs from the amount requested, the JCATI Program Manager will request a revised budget and project scope before funds are awarded.
- The PI is responsible for leading the proposed work, managing the budget, attending the symposium along with their students and reporting progress. The industry partner is responsible for delivering in-kind support and transitioning the technology back into the company.
- PI must get approval from JCATI Program Manager to spend their award funds other than as outlined in their budget/budget justification.
- If the PI changes academic institutions, JCATI funds cannot be transferred outside WA or to a private institution.
- JCATI requires a final report with information on technology transition progress, student involvement, and industry partner's delivered in-kind contribution. Report data is used for mandatory reporting to the WA legislature. Failure to deliver support or provide required information may affect future funding. JCATI will continue to follow up with the PI for updates tied to legislative reporting.
- PIs should work with their fiscal team to spend all award funds. Any unspent research funds are returned to the state via UW. Returning funds signals to the legislature JCATI is not optimizing current resources which could impact our future funding allocations.
- Recipient organizations, principal investigators, and industry partners are expected to reasonably assist JCATI in communicating funded work and its impact on the WA aerospace industry. Program funding depends on continued WA legislative support, so it is vital to update state officials on JCATI's importance to WA aerospace.