

JCATI 2023-24 Request for Proposals

Due Date: Friday, February 24, 2023, 5 PM PST

General Information

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.** Preferred industry projects are Technology Readiness Level (TRL) 4-7 technology issues. JCATI's mandate is to leverage the state's engineering proficiency to keep WA aerospace globally competitive.

How JCATI works: an aerospace company identifies a short-term technical problem and finds appropriate expertise in a WA public university engineering faculty member. Faculty submit a JCATI project application addressing the aerospace industry technical pain point. The proposal describes how faculty expertise can solve the problem as well as how the industry partner transitions results back into the company. After undergoing review, 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 and transition. Successful projects are clearly defined, well scoped and a collaborative effort by both partners.

WA aerospace companies of all sizes can leverage JCATI support to address TRL 4-7 technical issues critical to their competitiveness. For example, companies may lack in-house expertise or necessary diagnostic testing equipment, others might not have the bandwidth to examine potential solutions due to production deadlines. In these situations, JCATI can support researchers at WA public four year institutions to work on R&D questions of interest to these companies. Furthermore, JCATI projects provide industry partners with direct interactions with WA engineering students. 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 long-term grants or basic research support. Projects must have a company transition plan. JCATI projects are not basic 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 industry needs matchmaking help,** contact the Program Manager no later than January 27, 2023. This allows time to find a match and create a competitive proposal.

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 9, 2023 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 are all on the [JCATI funding page.](#)

Please Note: JCATI 2023-24 project funding levels depend on 2023 WA legislature re-appropriation. The JCATI review committee will select potential projects and finalize award amounts once our budget allocation is known. Due to session length, this may not be until late June.

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

Award Information

- Estimated number of awards for 2023-24: 12-15
- Maximum budget request: \$120,000 (\$115,000 for project + optional \$5000 for Undergraduate Scholars Program)
- For 2023-24, JCATI anticipates ~\$1.3M in funding.
- Project award period is 1 year: July 1, 2023 to June 30, 2024.
- JCATI funds must be spent by June 30, 2024. No cost extensions are not allowed. Any unspent funds are returned to the state.
- JCATI funds are not subject to indirect rates.
- Awardees are required to present projects at the April 2024 JCATI symposium (date TBD).
- Final report including information from both academic and industry partners is due by July 12, 2024.
- 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

- 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.
 - For UW Applicants:
 - UW does not allow postdocs to be PIs.
 - Applied Physics Laboratory (APL) researchers and staff are not eligible
- Industry Partners: **The primary aerospace industry partner must have a WA presence. The majority of project work and project impact must occur in WA.** Organizations outside WA may be permissible if above conditions are met. JCATI is funded by the WA Legislature, therefore all projects must directly benefit the state and its constituents.
- Previously funded JCATI projects wanting a second year of funding must reapply and undergo the review process. The PI must demonstrate sufficient progress and clearly explain why more funding is needed.
- PI may submit multiple applications but JCATI only funds one proposal per PI.

Management and Ownership of Intellectual Property

- JCATI funded projects have successfully transitioned technology to businesses of all sizes across the aerospace spectrum. Each academic institution has mechanisms in place regarding intellectual property including [UW](#) and [WSU](#) licensing options. We **strongly advise** 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

- **Projects must be WA State aerospace industry related with project impact occurring in WA**
- JCATI interprets aerospace broadly and relevant areas include **but are not limited to:**
- Aerospace materials: metals, composites, 3D printed, novel manufacturing processes
 - Aerospace propulsion: battery technologies, clean propulsion technologies, zero-emission air mobility
 - Aerospace sustainability: composite recycling, environmentally friendly manufacturing techniques, sustainable aviation fuels, hydrogen, carbon sequestration

- Aircraft configuration design: aerodynamics, distributed propulsion/sensing/actuation, aircraft health monitoring systems, digital twins, eVTOL
 - Aircraft or spacecraft power systems: power distribution systems; hybrid power generation and management
 - 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
 - Communications systems: aircraft, satellite/space communication
 - Controls and autonomy: aircraft or space systems
 - Human-machine interfaces: pilot training, display design, human fatigue modeling, robotic interface
 - Manufacturing and production innovation: robotics, additive manufacturing, augmented/virtual reality
 - Safety technology or diagnostic tools for passengers and/or aerospace workers
 - Software: machine learning, cybersecurity, AI for aerospace applications
 - Space: spacecraft, CubeSats, imaging, environmental monitoring and space-borne sensing, situational awareness, resource utilization, collision avoidance, debris removal
 - UAV systems: navigation, power, materials, autonomy, software
 - Advanced air mobility: propulsion, infrastructure, planning, network models, materials
- Preference is for projects with high probability of technology transitioning to the industry partner within 1-2 years (preferably sooner). JCATI funding is not appropriate for basic research projects 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 a letter of support documenting technology need and support amount. Industry partners are encouraged to find ways to involve students in the technology transition.
 - 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.

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
- UW Aero & Astro applicants: your project budget must be completed and signed off by AA grant staff no later than 5 PM Friday Feb 17.

Submit the application no later than Friday, February 24, 2023 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 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 in order:

I. Application Cover Sheet

Complete the 2023 Cover Sheet found under Application Forms on the [JCATI funding page](#).

II. Non-Technical Abstract (1-page, 150-word limit)

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 the 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.3)

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.** If the project is a continuation from a previous year, state progress and why another year of JCATI funding is necessary.

2. Objectives, Outcomes, Deliverables

Clearly list specific project objectives, anticipated outcomes and deliverables as required by the industry partner. How will you solve your industry partner’s technology problem?

3. Technical Innovation

Describe how the academic partner’s expertise will solve the industry partner’s technology need. Explain how the proposed innovation affects industry partner processes.

4. Need for JCATI Funds

Describe why the project is particularly suited to the one year JCATI funding mechanism in comparison to other funding options.

NOTE: limit of 2 pages total for sections A.1.-A.3. Succinctly explain why this JCATI project is important and why you are the one to solve it!

B. Industry Partnership and Transition Plan

1. Industry Partner Support

Describe the type and cash equivalent value of industry project support. Support can be cash, materials, consulting time, computing time, machining time, etc. At project end, the JCATI Program Manager verifies support delivery. Failure to deliver the proposed level of partner support is considered during future project application review.

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).

3. Technology Transition Plan

Provide a project plan and/or timeline written with the industry partner describing project milestones, academic partner exit and incorporation of the project technology by industry partner. How will the deliverables listed in Section A.2. move from the academic lab completely back to the industry partner within 1-2 years (preferably less)?

C. WA Economic and Educational Impact

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 WA business opportunity the technology opens up or improves?

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, highly-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, 2024.

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. Reviewer Suggestions (optional): Provide names and contact information of potential reviewers.

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. LOS should include the following:

- Name of industry contact and project role
- Type of 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 into the company.
- If applicable, brief 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 biosketch 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 competed the optional Narrative Section D).
- Use the budget form found under Application Forms on the [JCATI funding page](#). Include a budget justification briefly describing charges under each heading. The budget form must be signed off by both the PI and departmental grants staff.
- JCATI funded projects do not 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. Any unspent award funds are returned to the state.

- A. Senior personnel:
 - Faculty can draw salary 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.
 - Total tenure track faculty FTE is limited to 1.0-month summer salary. Research faculty may request more than one month's salary.
- B. Other Personnel:
 - Graduate students listed on JCATI projects receive tuition waivers except 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.
- C. Fringe Benefits
 - Use the appropriate benefits load rates for project personnel
- D. Equipment:
 - Include quote for any equipment over \$5000 and a description in the budget justification on why the equipment is needed.
 - JCATI funds cannot be used for foreign transactions.
 - All project purchases must follow the procurement rules set by their institution.
- E. Travel:
 - JCATI funds are only for US travel. Foreign travel is not allowed.
 - The 2024 symposium is tentatively planned for Spokane (date TBD). The PI should include \$750 for their symposium travel and lodging. JCATI pays for student symposium travel/lodging costs.
 - Funds are intended for travel to industry partner facilities for meetings, onsite testing, etc.
- F. Other Direct Costs
 - Include costs for materials, supplies, fabrication and other project services

- G. USP Funds (optional)
 - 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

DO:

- Complete the proposal cover sheet with appropriate signatures
- Assemble sections in order into one PDF for upload. Do you have the correct proofread 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 always is 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 after the database receives and time stamps the application.

Proposal Review Process

- JCATI proposal reviewers sign confidentiality agreements to ensure proprietary proposal information is undisclosed.
- The JCATI Board of Directors discuss reviewer scores and comments as a part of the final project selection.
- 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 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 and student involvement. JCATI will continue to follow up with the PI for updates on the industry transition and external funding.
- Any unspent research funds are returned to the state.
- 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.