

JCATI 2021-22 Request for Proposals

Proposal Due Date: Friday, February 26, 2021, 5 PM PST

General Information

Program Summary

The Joint Center for Aerospace Technology Innovation (JCATI) is a Washington state (WA) aerospace industry economic development program. The WA legislature requires JCATI funds to be used for:

- Transitioning innovative technologies into aerospace industry production and use
- Providing WA engineering students with direct aerospace industry exposure
- Increasing WA aerospace industry employment opportunities

JCATI provides short term funding via academic collaboration for aerospace companies to test and transition promising new technologies. The academic partner receives JCATI funding to work on the technology problem while the industry partner provides project support (in-kind and/or funding) necessary for project completion and transition. Past examples include software, materials testing and development, manufacturing methods, electronics modules, propulsion systems and other prototype testing. JCATI funds cannot support basic research projects.

JCATI prefers to fund Technology Readiness Levels (TRL) 4-7 projects. These project levels are the gap between academic research and industry deployment often referred to as the "Valley of Death." JCATI's purpose is to help WA aerospace companies bridge this gap. TRL definitions can be found under [Application Quick Links on the JCATI Request for Funding webpage](#). Contact the JCATI Program Manager if you are unsure of your project TRL level.

Aerospace companies of all sizes are invited to collaborate with academic researchers to solve their technology challenges. Interested industry partners should contact faculty directly or the JCATI Program Manager to identify potential academic partners.

JCATI funds are not long-term grants or basic research support. Projects must have a plan that engages the industry partner in completing development and transitioning technology so the company is positioned to take over the project.

JCATI's emphasis is on one year projects but we will consider shorter time scale projects. JCATI currently supports senior capstone projects at Central Washington University and is looking for industry partner with Eastern Washington University. Aerospace companies interested in CWU and EWU capstones should contact the JCATI Program Manager.

Please Note: JCATI 2021-22 project funding depends on 2021 WA legislature re-appropriation. The JCATI review committee will select potential projects and finalize award amounts once our budget allocation is known. This may not be until late June, as 2021 is a long legislative session.

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

Award Information

- Estimated number of awards for 2021-22: 12-15
- Award amount: \$50,000-\$115,000

- For 2021-22, JCATI anticipates ~\$1.2M in funding.
- Project award period is July 1, 2021 to June 30, 2022.
- JCATI funds must be spent by June 30, 2022. Carry forward/no cost extensions are not allowed and 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 2022 JCATI symposium
- Final report with information from both the academic awardee and industry partner is due by July 15, 2022.

- New for 2021-22: After projects are selected, we hope to offer awarded PIs the opportunity to request additional funds to involve undergraduate URM and women in their project. We are still working out the details and further information will be provided in May.

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 any co-investigators must be employed by the applicant organization. Principal investigators must meet their employer's requirements for such status.
 - UW Applicants
 - UW does not allow postdocs to be PIs.
 - Researchers/staff from the Applied Physics Laboratory (APL) are not eligible to participate, as JCATI is not allowed to pay any indirect costs.
- Industry Partners: industry partner headquarters may be located outside WA but partner must have a physical presence in WA. [The JCATI project benefit and impact must occur in WA.](#)
- Previously funded JCATI projects must reapply annually and undergo the review process. The PI must demonstrate sufficient progress and clearly explain why another year of funding is needed.
- PI may submit multiple applications but JCATI will only fund one proposal per PI.

Management and Ownership of Intellectual Property

- JCATI funded projects have successfully transitioned technology to businesses across the aerospace spectrum. Each academic institution has mechanisms in place regarding intellectual property including [UW](#) and [WSU](#) licensing options. We encourage you to 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 available to the public without permission from both the academic and industry partner.
- JCATI proposal reviewers sign confidentiality agreements to ensure proprietary proposal information is undisclosed.

Types of Supported Activities

- Projects must be related to the WA State aerospace industry 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 mobility
 - Aerospace sustainability: biofuels, composite recycling, environmentally friendly manufacturing techniques
 - Aircraft configuration design: aerodynamics, distributed propulsion/sensing/actuation, aircraft health monitoring systems, digital twins
 - Aircraft or spacecraft power systems: power distribution systems in aircraft/spacecraft
 - Airport transportation modernization: ground transportation, baggage handling, air traffic management, air transportation safety, sustainable aviation, cargo distribution, touchless technologies
 - Communications systems: aircraft, satellite/space communication
 - Controls and autonomy: aircraft or space systems
 - Human-machine interfaces: pilot training, display design, fatigue modeling
 - 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 systems
 - Space: spacecraft, CubeSats, imaging, environmental monitoring
 - UAV systems: navigation, power, materials, autonomy, software
- Preference is given to projects with high probability of transitioning the technology to their industry partner within 1-2 years. JCATI funding is not meant for basic research projects.
- Industry partners must provide support (cash and/or in-kind) to the academic partner. In-kind support can include materials, consulting time, machinery access, computing time, testing facilities, etc. Industry partners are encouraged to provide student internships which could provide continuity for project 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 funding can augment the PIs current industrially-sponsored research. Applicants must include letters of support from industry partners documenting their technology need and support amount.

JCATI Proposal Preparation and Submission Instructions

- Use Arial 10-point font size and 1" margins.
- 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 in the application packet.
- UW Aero & Astro applicants: budget must be completed and signed off by AA fiscal staff by 5 PM Friday Feb 19.

Submit the Application Packet no later than Friday, February 26, 2020 at 5:00 PM (PST). Upload the application as a single PDF using the Online Application Form found under Application Quick Links. Submissions are time stamped and late proposals will not be reviewed. Do not send your proposal to the JCATI Program Manager. Only proposals submitted using the Online Application Form on the JCATI website will be accepted. The JCATI Program Manager will confirm receipt of your application.

The JCATI proposal must include the following elements in the order below:

I. Application Cover Sheet

Complete the Cover Sheet found under Application Quick Links. If there are more than 2 Co-Investigators, introduce the project team in the narrative.

II. Non-Technical Abstract (limit 1 single-spaced page)

Succinctly explain the project objectives, expected deliverable(s) and the impact in accordance with JCATI's purpose.

III. Narrative (limit 5 single-spaced pages)

Direct the narrative to an educated lay audience outside your field. All figures must be 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-limit of 2 pages total for sections A.1-A.3

1. Technical Background and Approach

Describe the technical issue and technology need faced by your industry partner. **Include the current TRL level of the project and justification of the level chosen.** Clearly state if the project is the first stage of a larger multi-phase project. If this is a continuation of a previously funded project, briefly state the results and why another year of JCATI funding is needed.

2. Objectives, Outcomes, Deliverables

Clearly list the specific project objectives, anticipated outcomes and deliverables as required by the industry partner.

3. Technical Innovation.

Describe how the academic partner's expertise will help solve the industry partner's technology need. Explain how the proposed innovation will affect 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.

5. Other Sources of Funding

List other funding sources and/or facilities that can be leveraged for project success.

B. Industry Partnership and Transition Plan

1. Industry Partner Support (funding and/or in-kind)

Describe the type and cash equivalent value of industry support for the project. The JCATI Program Manager will check with the industry contact to verify support delivery. Failure to deliver the proposed level of partner support will be considered by the JCATI board during future project application review.

2. Partners and Roles

Provide the name(s) of the main industry partner contact(s) and their role in transitioning the technology into the company. Describe the roles of the PI, industry partner(s) and other personnel during the project period as well as in the transition of the technology from the academic partner.

3. Technology Transition Plan

Provide a project plan and/or timeline written with the industry partner describing the project endpoint, intermediate milestones, academic partner exit and incorporation or further testing of the project technology by industry partner.

C. WA Economic and Educational Impact

1. Business Opportunities and Job Benefits

Describe how the project will benefit the industry partner and make them more competitive in the aerospace industry. Include any measurable direct/indirect job creation or fiscal benefits resulting from the technology.

2. Educational, Internship and Job Opportunities

Describe how this project will benefit workforce development and/or provide other educational opportunities for engineering students interested in WA aerospace industry careers.

IV. References and Reviewer Suggestions (limit 1 single-spaced page)

1. References-List references from the Narrative (Section III) here.

2. Reviewer Suggestions (optional): Provide names and contact information of suggested reviewers. Make sure that your potential reviewers' employer allows them to serve as reviewers. If applicable include the names of those who should not review your proposal.

V. Budget and Justification

- Use the budget form found under Application Quick Links and include a budget justification describing charges under each heading. The budget form must be signed off by both the PI and designated budget manager.
- JCATI funded projects do not allow Facilities and Administrative costs (indirects/overhead)
- There is only one PI and one budget number per project. 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 salary can be drawn from only one JCATI project. If a funded PI also has FTE on a different JCATI funded project, the PI must pick which project to draw salary from.
 - Tenure track faculty are limited to one month summer salary. Research faculty may request more than one month salary.
- B. Other Personnel:
 - Graduate students listed on JCATI projects receive tuition waivers except UW Mechanical Engineering Master's students taking PCE courses. PCE will not waive tuition for students on JCATI projects.
- D. Equipment:
 - For equipment over \$5000, include the price quote with the budget justification.
 - 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.
 - The format of the 2022 symposium is still unclear. The PI should include \$750 for their own potential symposium travel and lodging. JCATI pays for student symposium travel/lodging costs.

VI. Biosketches

- Use the NSF biosketch format found under Application Quick Links. Maximum 2 pages for PI/Co-PI emphasizing professional experiences pertinent to the proposed effort.

VII. Industry Letters of Support

Industry Letters of Support must include the following:

- 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.
- Name of industry contact and role in the project.
- Description of how the proposed technology will be transitioned and incorporated in company operation and processes.
- Milestones or decision points for the distribution of proposed industry support (funding and/or in-kind).

Proposal Review Process

- A committee appointed by the JCATI Executive Director reviews and triage submissions based on the RFP criteria. Those selected move on to full review.
- Reviewers sign confidentiality agreements protecting both the content of the applications and the review process. Reviewers must not have personal, professional or financial interests that conflict with their ability to perform an unbiased review.
- The JCATI Board of Directors discuss reviewer scores and comments before 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 amount is different than the amount requested, a revised budget and project scope must be submitted to the JCATI Program Manager and approved 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.
- JCATI funds cannot be transferred outside WA or to a private institution if the PI changes academic institutions.
- JCATI requires a final report including information on technology transition progress and student involvement. Any unspent research funds are returned to the state. JCATI will continue to follow up with the PI for updates on the industry transition and external funding
- 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. JCATI program funding depends on continued WA legislative support so it is vital to update state officials on JCATI's importance to WA aerospace.