

LAVA – Leveraging Additive for High Velocity Applications

February 3, 2022

Brandon D. Ribic, PhD.

*America Makes, NCDMM
America Makes Technology Director
Brandon.Ribic@ncdmm.org*

LAVA Overview

- Only lead must be a member
- 1 step response – Full Proposal

America Makes RFP

**Project Call for America Makes
Applied Research Projects
Leveraging Additive for High Velocity Applications
(LAVA)**

 America Makes | Driven by 

Prepared by
**The National Center for Defense
Manufacturing and Machining (NCDMM)**

Jason Thomas, Portfolio Manager
238 W. Boardman Street
Youngstown, OH 44503
Phone: 330-610-0415
projectcall@americamakes.us

26 January 2022

NCDMM reserves all rights in connection with this document and in the subject matter represented therein. This material is based on Air Force Research Laboratory agreement number FA9550-20-2-0100. The U.S. Government is authorized to reproduce and distribute reprints for Governmental purposes notwithstanding any copyright notation thereon. The views and conclusions contained herein are those of the authors and should not be interpreted as necessarily representing the official policies or endorsements, either expressed or implied, of Air Force Research Laboratory or the U.S. Government.

Schedule

Event	Date
Project Call Announcement and Posting	1/26/2022
Webinar – Registration Required	2/3/2022
Questions from Proposers about Scope or Approach Due	2/3/2022
Responses to Proposers about Scope or Approach Due (All questions and responses will be shared with all proposers on www.americamakes.us)	2/9/2022
Deadline for proposal lead to complete a fully executed America Makes Membership Agreement	2/18/2022
Fully Executed NDA with NCDMM (only if proposal contains proprietary information)	2/18/2022
Full Project Proposal Submission Due Date (Note: No Concept Paper Submission)	3/4/2022
Anticipated Decision and Notification to Project Proposal Teams	4/1/2022
Anticipated Date to have ALL Projects on Contract	5/2/2022

Background and Objective

- Despite immense progress in the successful demonstration of high velocity (or high Mach) systems and the value AM technologies present in this application domain, there exists opportunities to advance understanding and demonstrate measurable improvement for AM product distortion compensation using various model-based techniques
- Develop and demonstrate model-based approaches to advance the domestic supply chain's capability to mitigate various factors resulting in unacceptable variances in final AM product geometry
- It is foreseen that successful outcomes of these efforts may include means to improve AM product manufacturability and yield

Requirements

- AM process types and associated material systems addressed in response to this funding opportunity shall include at least one of the following:
 - Non-directed energy deposition AM of metal alloys
 - AM of fiber reinforced C-C precursor relevant materials
 - AM of ceramic matrix composites

- Technical approaches to addressing this topic shall include at least one of the following:
 - Managing as built and final product form geometric tolerancing as well as tolerance stack up when multiple parts are to be joined
 - Mitigating risks to achieving acceptable final product geometry requirements influenced by post-processing including joining operations, joint design, heat treatment, machining, finishing, and/or coating
 - Cost analysis, scalability, and manufacturing operations trade-off (and/or risk) assessments
 - Contact and non-contact metrology methods

LAVA – 1 award anticipated

Funding Description	Amount
Total Federal Funding Available	\$500,000
Max. Federal Award Per Proposal	\$500,000
Minimum Cost Share (percentage of federal award amount requested per proposal)	25%
Maximum Allowed Period of Performance (PoP) – shorter periods are acceptable	15 Months (12 months execution and 3 months reporting)

Eligibility

- The lead Proposer is a current member of America Makes and in good standing by Friday, February 18, 2022. Information on how to join America Makes is available at www.americamakes.us/membership.
- Cost share accrued in this project may also be applied towards membership, as with other project calls. However, cost-share proposed on a future project cannot be counted towards a new America Makes membership. To become a member by the aforementioned deadline, organizations shall commit to a cash payment and / or complete an @Program MOU
- A 25% cost share is required for each project submittal. Example: If \$1.00 of funding is requested from America Makes, \$0.25 in cost share must be committed against that \$1.00 for a total scope of \$1.25.
- The lead Proposer is fully responsible for all project and subcontract performance.
- The lead Proposer shall be registered in U.S. System for Award Management (SAM) and have a cage code and duns number before submitting a proposal.
- Proposal team acknowledges that information from this project will be shared with America Makes members in accordance with the membership agreement.
- Proposal team arrangements are identified, and relationships are fully disclosed.

Proposal and Contracting Information

- Executive Summaries must contain information which is publicly releasable, non-proprietary
 - Purpose
 - To aid in America Makes public release process for award announcement
 - To demonstrate impact and merits of Institute's efforts to the public
- No fee allowed
- Cover page should include DUNS and CAGE of at least team lead
- Teams must submit additional information to accelerate contracting
 - Sub-recipient agreement will be included in RFP, must be reviewed and any requested changes be sent in with proposal
 - No response certifies agreement as is upon award
 - Otherwise, award will be canceled

Minimum Deliverables

Minimum Deliverable	Timeline
Written Final Report -Minimum of one round of revisions completed with PM/NCDMM prior to final submission – Completed first draft shall be submitted to PM/NCDMM no later than conclusion of month twelve of proposed effort	Due on or prior to end of proposed period of performance
TRX, MMX, webinar, or other America Makes hosted forum to brief membership	Minimum of one (1) presentation prior to close out, two (2) at most
Financial and man-hour reports	Monthly

Minimum Deliverables (Cont.)

Minimum Deliverable	Timeline
<p>Lead proposer shall participate in at least one working group, advisory group, steering committee, etc. relevant to the subject matter of the project.</p>	<p>Minimum of one (1) presentation outlining all deliverables (CDIP, associated tangible artifacts, and associated roadmap requirements), KPP's, and data management plan within 60 days of project start date.</p> <p>Minimum of one (1) presentation of milestone achievements, KPPs, and lessons learned relevant to the fulfillment or creation of roadmap requirements within 60 days of PoP end date.</p> <p>Hours attending and participating in meetings or activities shall be tracked and reported</p>
<p>Data Management Plan, KPPs, Planned project deliverables list with corresponding (existing/ new) Technology/ Education & Workforce Development (EWD) Roadmap Requirements</p>	<p>Draft at time of proposal</p> <p>Final 60 days after project start date</p>

Reporting

- At minimum one (1) (at most two (2)) project briefings at America Makes Members Meeting and Exchange (MMX), Technical Review and Exchange (TRX an online webinar, and/or other hosted forum.
- Presentation at annual DoD review or site visit.
- One (1) presentation to a chartered group (advisory, working, committee, etc.) relevant to the focus of the project that outlines all deliverables (CDIP, associated tangible artifacts, and associated roadmap requirements), KPPs, and data management plan within 60 days of project start date.
- One (1) presentation to a chartered group (advisory, working, committee, etc.) relevant to the focus of the project which outlines milestone achievements, KPPs, and lessons learned relevant to the fulfillment or creation of roadmap requirements within 60 days of end of the period of performance.
- Data Management Plan, KPPs, planned project deliverables list with corresponding (existing/ new) Technology Roadmap Requirements finalized and documented within 60 days of project start date.
- Review of Data Management Plan and execution 60 days prior to end of the period of performance.
- Virtual monthly team meetings that include the NCDMM PM, Roadmap Advisory Group members, other relevant chartered group members or committee members, and Government Technical advisors that are assigned post award as necessary or as agreed upon by lead organization/NCDMM/government technical advisors.
- Reports, presentations, or teleconferences provided upon request by NCDMM or AFRL
- Finalized, written report (minimum one (1) round of revisions with NCDMM required before final submission)

Evaluation Criteria

- **Executive Summary (5%)**
- **Technical Approach and Methodology (60%)**
- **Technology Dissemination to America Makes Members and Impact to the USAF (20%)**
- **Program Management Approach (15%)**

When America Makes America Works



 AmericaMakes.us

 [@AmericaMakes](https://twitter.com/AmericaMakes)

 [/AmericaMakes](https://facebook.com/AmericaMakes)