

# *Improvements in Manufacturing Productivity via Additive Capabilities and Techno-Economic Analysis 2.0 (IMPACT 2.0)*

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## **John Martin**

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# Project Call is Two Separate Documents

- **Part A** is one-step response – Full Proposal
- **Part B** is two-step response – Project Concept followed by Full Proposal
  - Full Proposal step for Part B will be by invitation only
- Each response shall be limited to addressing only one topic
  - Please note topic number being addressed in response
- Multiple submissions by a lead proposer are welcome

America Makes RFP

## Project Call for America Makes Applied Research Projects

Improvements in Manufacturing Productivity via  
Additive Capabilities and Techno-Economic  
Analysis 2.0 (IMPACT 2.0)  
Part A: Topics 1 - 4

- AND -

Improvements in Manufacturing Productivity via  
Additive Capabilities and Techno-Economic  
Analysis 2.0 (IMPACT 2.0)  
Part B: Rapid Casting Demonstration Challenge



Prepared by

The National Center for Defense  
Manufacturing and Machining (NCDMM)

# Background - Demonstrating Lead Time, Productivity, and Yield Improvements

- Understand the interrelationships of casting, forging, and additive manufacturing to identify opportunities where AM technology can increase capacity and capability within the existing U.S. industrial base and reduce lead times for the acquisition of cast and forged DoD products
- Throughout March and May of 2023, America Makes and members of the U.S. additive manufacturing, casting, and forging supply chain participated in a series of expert interviews, manufacturing site visits, and workshops
- Common Themes
  - AM for tooling
  - Improving confidence in AM
  - Improving competency for decision making and quickly accessing qualified manufacturing capacity

# Areas of Relevance - Demonstrating Lead Time, Productivity, and Yield Improvements

- DoD is seeking casting and forging-related AM technologies that improve cost efficiency and provide increased capabilities, quality, and/or capacity. Proposed efforts should address areas of relevance to the Department of Defense which include:
  - Thin-walled light alloy sand castings (e.g., magnesium, aluminum, and other lightweight metals)
  - Casting and forgings for high-tensile, high yield strength, low alloy steel
  - Large and very large titanium/specialty alloy castings
  - Complex castings for high performance turbine engines with specific application-driven material systems and stringent quality requirements
  - Nonferrous, corrosion-resistant castings and forgings using material systems such as, but not necessarily limited to, CuNi, NiAlBr, and Ni-alloys
  - Addressing the need for extra-large forgings for naval and aerospace applications
  - Reducing forging lead-times for all DoD applications

# Objectives - Demonstrating Lead Time, Productivity, and Yield Improvements

- Demonstrate impact through quantitative metrics which exhibit a threshold and objective value. Examples of high priority factors for consideration to successfully demonstrate impact for this topic area include:
  - Baseline cost, cost reduction %, and opportunities for future cost savings
  - Baseline lead time, lead time reduction %, and opportunities for future lead time reduction
  - Baseline yield/scrap, reduced scrap %, and opportunities for future yield improvements
  - Reduced time to realize/on-time delivery of first articles demonstrated (or other industrially recognized qualification metrics)
  - Baseline man hours per part, % reduction or reduced number man hours per part, and opportunities for future labor reduction
  - Baseline tonnage, increased tonnage due to introduction of AM technology, and opportunities for future increase in tonnage
  - Baseline throughput, %increase in throughput due to introduction of AM technology, and opportunities for future increase in throughput
  - Verification of specific critical to quality metrics (porosity, inclusions, geometric dimensioning and tolerancing [GD&T] factors, etc.)
  - Number of qualified part numbers
  - Number of qualified/approved vendors or suppliers

# Part A: Topics 1-4

- **Topic 1:** Mature and Promote Methods to Add Functional Surfaces and Complex Geometric Features to Forgings
- **Topic 2:** Disseminate Leading Practices and Promote the Adoption of 3D Printed Sand Molds/Cores
- **Topic 3:** Techno-Economic Analysis Tool for Selection of Metal Part Manufacturing Processes
- **Topic 4:** Ensure Operational Recovery of Industrial Production

# Schedule - Part A: Topics 1-4

Event	Date
Project Call Announcement and Posting	4/11/2024
Questions from Proposers about Scope or Approach Due	4/22/2024
Responses to Proposers about Scope or Approach Due (All questions and responses will be shared with all proposers on <a href="http://www.americamakes.us">www.americamakes.us</a> )	4/26/2024
Fully Executed NDA with NCDMM (only if proposal contains proprietary information)	5/29/2024
Deadline for lead proposer to be an America Makes member	5/29/2024
Full Project Proposal Submission Due Date	6/14/2024
Anticipated decision and notification to project proposal teams	7/24/2024
Anticipated Date to have ALL Projects on Contract	9/24/2024

## Funding - Part A: Topics 1-4

Funding Description	Amount
Total Federal Funding Available	\$5,100,000
Max. Federal Award – Topic 1	\$2,000,000
Max. Federal Award – Topic 2	\$1,500,000
Max. Federal Award – Topic 3	\$1,100,000
Max. Federal Award – Topic 4	\$500,000
Minimum Cost Share (percentage of federal award amount requested per proposal)	50%



# Period of Performance - Part A: Topics 1-4

Maximum Acceptable Period of Performance (PoP)	Duration
Topic 1	27 Months (24 months execution, 3 months reporting)
Topic 2	27 Months (24 months execution, 3 months reporting)
Topic 3	21 Months (18 months execution, 3 months reporting)
Topic 4	12 Months (9 months execution, 3 months reporting)
Shorter Periods are Acceptable	

# Eligibility – Part A: Topics 1-4

- Lead proposer is a current member of America Makes and in good standing by Wednesday, May 29, 2024. Project team members are not required to be America Makes members, but are highly encouraged to do so.
- Information on how to join America Makes is available at [www.americamakes.us/membership](http://www.americamakes.us/membership). Any non-America Makes members contributing to proposed effort execution are not permitted to participate in project team discussions until completing a fully executed America Makes Membership Agreement. (Note: The foreign membership approval process requires a minimum of three weeks to complete.)
- 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 deadline, organizations shall commit to a cash payment and/or complete an @Program MOU.
- A 50% cost share is required for each project submittal. Example: If \$1.00 of funding is requested from America Makes, \$0.50 in cost share must be committed against that \$1.00 for a total scope of \$1.50
- 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 UEI 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
- **Any foreign nationals conducting work on the project shall be declared within the Project Team Appendix. Any project activities occurring outside of the U.S. must be reported and approved in advance by the America Makes Program Management Office.**
- **Foreign nationals from the following countries are strictly prohibited on project teams and will result in an automatic disqualification: China, Cuba, North Korea, Iran, Syria, Russia**

# Minimum Deliverables – Part A: Topics 1-4

Minimum Deliverable	Timeline
Written Technical Progress Reports	Quarterly
Project update calls or virtual meetings between project team, America Makes/NCDMM PM , and Government advisory	Monthly, or more as necessary
Financial and man-hour reports	Monthly
Kickoff Meeting	1 month after award or sooner
Data Management Plan including at minimum:  Any commercial software packages to be used, standards or data schemas to be used, and methodology for notating and labeling data to enable linking of various sample properties and characteristics, and plans for incremental delivery of data, and key performance parameters (KPP's)	Draft at time of proposal  Final no later than 4 months after award

# Minimum Deliverables – Part A: Topics 1-4

Minimum Deliverable	Timeline
Data Persistence Plan (how will data be stored and accessed after project conclusion) – this is meant to address data storage by the project lead by means aside from America Makes CORE	Initial at proposal Final no later than 4 months after award
Planned project deliverables list with corresponding (existing/ new) Technology Roadmap Requirements	Draft at time of proposal Final no later than 60 days after award
Experimental, qualification, material, testing and inspection data (feedstock, process, material, post-process, property, etc.) available in a static format and in a database with property meta-data (including CAD models and build files); non-destructive inspection data and meta-data	Delivered or posted to America Makes CORE database regularly as available
Schema and Data Compliance Reviews. Data shall:  Be provided electronically, demonstrate pedigree and provenance, identify test apparatus/manufacturing/ fabrication equipment and calibration, testing standards or processing specifications used to include sample preparation and/or manufacturing equipment configuration, experimental/ characterization/manufacturing process conditions and procedures, raw mechanical test data, data reduction and statistical analysis procedures, and any uncertainty associated with data	Quarterly

# Minimum Deliverables – Part A: Topics 1-4

Minimum Deliverable	Timeline
Presentation at an America Makes meeting (MMX/TRX)	Once per calendar year
<p>Proposal lead organization shall participate on at least one swimlane working group (Design, Materials, Process, Value Chain, or AM Genome) relevant to subject matter of the project</p>	<p>Quarterly (via progress reporting)</p> <p>Effort performed (as well as hours) via working group participation shall be documented in progress reports and regular attendance should be maintained for all working group teleconferences/meetings.</p> <p>Minimum of one presentation outlining all deliverables (CDIP, associated tangible artifacts, and associated roadmap requirements), KPP's, and data management plan within 4 months of project start date.</p> <p>Minimum of one presentation of milestone achievements, KPP's, and lessons learned relevant to the fulfillment or creation of roadmap requirements no later than 60 days of the period of performance end date.</p>
<p>Written Final Project Report (minimum one round of revision completed with PM/NCDMM prior to final submission).</p> <p>At a minimum report will outline: application, approach, team members and roles, potential benefits of effort, motivations and reasoning for technical approach, KPPs, summary of tasking, methods, standards and specifications used, deviations to those standards or specifications, outcomes/results, summary and observations and analysis of data gathered, how data substantiated successful outcome of this effort, lessons learned, measurable impact(s) realized due to this effort, future opportunities for research and development realized through this effort</p>	<p>Complete draft submitted 3 months prior to end of period of performance.</p> <p>Final report submitted no later than 15 days prior to end of period of performance.</p>
Additional Deliverables specific to the proposed effort	"Deliver (upload to CORE) as you go" – As soon as data or deliverable is finalized for release

# Reporting - Part A: Topics 1-4

1. Technical progress reports
2. Kickoff meeting
3. Virtual teleconferences with project team
4. Virtual teleconferences with advisory groups as necessary and applicable
5. Interchange meetings as necessary and applicable (in-person and/or virtual)
6. Financial and man-hour reports
7. Man-hour reports for attending working group meetings and supporting working group activities
8. Data management plan
9. Data persistence plan
10. Interim project reports as applicable

# Reporting - Part A: Topics 1-4

11. Presentations at national meetings/conferences
12. Transition and commercialization plan as applicable
13. Program review as applicable
14. Project briefings annually at America Makes Members Meeting (TRX or MMX)
15. Reports, presentations, or teleconferences upon request by NCDMM and OSD ManTech
16. Working group, advisory group, or steering committee participation shall include presentation of deliverables, KPP's, data management plan, milestone achievements or lessons learned relevant to the fulfillment or creation of roadmap requirements, requesting subject matter expertise support, and consultation for project steering group purposes or as necessary.
17. Finalized, written report (minimum one round of revision with NCDMM required before final submission)

# Evaluation Criteria - Part A: Topics 1-4

- **Executive Summary** (Executive summary is not scored but will be considered as part of the overall value proposition of the proposal.)
- **Technical Approach and Methodology (40%)**
- **Data Management Plan (10%)**
- **Technology Dissemination to America Makes Members and Impact to DoD (40%)**
- **Program Management Approach (10%)**
- **Cost** (Cost and cost share are not scored but will be considered as part of the overall value proposition of the proposal.)



# Part B: Rapid Casting Demonstration Challenge

## Overview

### Submission Process (will be 2 steps)

- **Step 1: Project Concept**
- **Step 2: Full Proposal** (invitation only)

### Project Execution Process (will be in 2 stages)

- **Stage 1: Preparation & Initial Demonstration**
  - Stage 1 will include preparation and organization of all the necessary technologies and capabilities to be used in the AM-augmented advanced manufacturing process to produce the cast part, followed by one or more demonstrations to serve as a preliminary validation point for Stage 2. This stage will conclude at end of January 2025.
- **Stage 2: Challenge Portion**
  - Stage 2 will directly follow the completion of Stage 1. At the beginning of Stage 2, DoD partners will share a casting design and associated necessary specifications. Teams will then utilize the rapid casting capability to manufacture, finish, and inspect the casting specified by the DoD partners. The intent is to demonstrate the speed (shortest delivery timeline possible) at which the proposed rapid casting capability can deliver a finished part which meets DoD specified requirements (acceptance criteria).

# Schedule - Part B: Rapid Casting Challenge

Event	Date
Project Call Announcement and Posting	4/11/2024
Questions from Proposers about Scope or Approach Due	4/22/2024
Responses to Proposers about Scope or Approach Due (All questions and responses will be shared with all proposers on <a href="http://www.americamakes.us">www.americamakes.us</a> )	4/26/2024
Step 1: Project Concept Due	No Later than 5pm EST 5/10/24
Anticipated Decision and Selection for White Papers/Project Concepts	5/29/2024
Fully Executed NDA with NCDMM (only if proposal contains proprietary information)	6/12/2024
Deadline for Fully Executed Membership Agreement	6/12/24
Deadline for lead proposer to be an America Makes member	6/12/2024
Step 2: Full Project Proposal Submission Due Date (invitation only)	No Later than 5pm EST 6/28/2024
Anticipated decision and notification to project proposal teams	7/24/2024
Anticipated Date to have ALL Projects on Contract	9/24/2024

# Funding - Part B: Rapid Casting Demonstration Challenge

Funding Description	Amount
Total Federal Funding Available	\$1,500,000
Max. Federal Award – Per Proposal	\$500,000
Minimum Cost Share (percentage of federal award amount requested per proposal)	50%

# PoP - Part B: Rapid Casting Challenge

Maximum Acceptable Period of Performance (PoP)	Duration
Maximum Allowed Period of Performance (PoP) – shorter periods are acceptable	9 Months (7 months execution and 2 months reporting)

# Eligibility – Part B: Rapid Casting Demonstration Challenge

- For Step 1: Project Concept - the lead proposer is not required to be an America Makes member.
- For Step 2: Full Proposal (invitation only) - the lead proposer is a current member of America Makes and in good standing by **6/12/24**. (Proposers for Phase 1 need not be a member at time of concept submittal).
- Information on how to join America Makes is available at [www.americamakes.us/membership](http://www.americamakes.us/membership). Any non-America Makes members contributing to proposed effort execution are not permitted to participate in project team discussions until completing a fully executed America Makes Membership Agreement. (Note: The foreign membership approval process requires a minimum of three weeks to complete.)
- 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 deadline, organizations shall commit to a cash payment and / or complete an @Program MOU.
- A 50% cost share is required for each project submittal. Example: If \$1.00 of funding is requested from America Makes, \$0.50 in cost share must be committed against that \$1.00 for a total scope of \$1.50
- 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 UEI 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
- **Any foreign nationals conducting work on the project shall be declared within the Project Team Appendix. Any project activities occurring outside of the U.S. must be reported and approved in advance by the America Makes Program Management Office.**
- **Foreign nationals from the following countries are strictly prohibited on project teams and will result in an automatic disqualification: China, Cuba, North Korea, Iran, Syria, Russia**

# Minimum Deliverables – Part B: Rapid Casting Demonstration Challenge

Minimum Deliverable	Timeline
Written Technical Progress Reports	Quarterly
Project update calls or virtual meetings between project team, America Makes/NCDMM PM , and Government advisory	Monthly, or more as necessary
Financial and man-hour reports	Monthly
Kickoff Meeting	1 month after award or sooner
Data Management Plan including at minimum:  Any commercial software packages to be used, standards or data schemas to be used, and methodology for notating and labeling data to enable linking of various sample properties and characteristics, and plans for incremental delivery of data, and key performance parameters (KPP's)	Draft at time of proposal  Final no later than 4 months after award

# Minimum Deliverables – Part B: Rapid Casting Demonstration Challenge

Minimum Deliverable	Timeline
Data Persistence Plan (how will data be stored and accessed after project conclusion) – this is meant to address data storage by the project lead by means aside from America Makes CORE	Initial at proposal Final no later than 4 months after award
Planned project deliverables list with corresponding (existing/ new) Technology Roadmap Requirements	Draft at time of proposal Final no later than 30 days after award
Experimental, qualification, material, testing and inspection data (feedstock, process, material, post-process, property, etc.) available in a static format and in a database with property meta-data (including CAD models and build files); non-destructive inspection data and meta-data	Delivered or posted to America Makes CORE database regularly as available
Schema and Data Compliance Reviews. Data shall:  Be provided electronically, demonstrate pedigree and provenance, identify test apparatus/manufacturing/ fabrication equipment and calibration, testing standards or processing specifications used to include sample preparation and/or manufacturing equipment configuration, experimental/ characterization/manufacturing process conditions and procedures, raw mechanical test data, data reduction and statistical analysis procedures, and any uncertainty associated with data	Quarterly

# Minimum Deliverables – Part B: Rapid Casting Demonstration Challenge

Minimum Deliverable	Timeline
<p>In-Person Presentation at an America Makes meeting (MMX/TRX)</p>	<p>Once per calendar year</p>
<p>Proposal lead organization shall participate on at least one swimlane working group (Design, Materials, Process, Value Chain, or AM Genome) relevant to subject matter of the project</p>	<p>Quarterly (via progress reporting)</p> <p>Effort performed (as well as hours) via working group participation shall be documented in progress reports and regular attendance should be maintained for all working group teleconferences/meetings.</p> <p>Minimum of one presentation outlining all deliverables (CDIP, associated tangible artifacts, and associated roadmap requirements), KPP's, and data management plan within 4 months of project start date.</p> <p>Minimum of one presentation of milestone achievements, KPP's, and lessons learned relevant to the fulfillment or creation of roadmap requirements no later than 60 days of the period of performance end date.</p>
<p>Written Final Project Report (minimum one round of revision completed with PM/NCDMM prior to final submission).</p> <p>At a minimum report will outline: application, approach, team members and roles, potential benefits of effort, motivations and reasoning for technical approach, KPPs, summary of tasking, methods, standards and specifications used, deviations to those standards or specifications, outcomes/results, summary and observations and analysis of data gathered, how data substantiated successful outcome of this effort, lessons learned, measurable impact(s) realized due to this effort, future opportunities for research and development realized through this effort</p>	<p>Completed draft submitted 7 months after award</p> <p>Finalized report submitted 9 months after award</p>



# Minimum Deliverables – Part B: Rapid Casting Demonstration Challenge

Minimum Deliverable	Timeline
<p>Additional Deliverables specific to the proposed effort including:</p> <ol style="list-style-type: none"><li>1.) The finished casting produced during the sprint.</li><li>2.) The 3D CAD drawing produced by reverse engineering of the sprint casting in the finish machined state to include geometric dimensioning and tolerancing</li><li>3.) Quality reports for the sprint casting verifying the casting met requirements (e.g., test and inspection results)</li><li>4.) A final report on this specific process</li></ol>	Deliver (upload to CORE) as you go” – As soon as data or deliverable is finalized for release

# Reporting – Part B: Rapid Casting Demonstration Challenge

1. Technical progress reports
2. Kickoff meeting
3. Virtual teleconferences with project team
4. Virtual teleconferences with advisory groups as necessary and applicable
5. Interchange meetings as necessary and applicable (in-person and/or virtual)
6. Financial and man-hour reports
7. Man-hour reports for attending working group meetings and supporting working group activities
8. Data management plan
9. Data persistence plan
10. Interim project reports as applicable

# Reporting – Part B: Rapid Casting Demonstration Challenge

11. Presentations at national meetings/conferences
12. Transition and commercialization plan as applicable
13. Program review as applicable
14. Project briefings annually at America Makes Members Meeting (TRX or MMX)
15. Reports, presentations, or teleconferences upon request by NCDMM and OSD ManTech
16. Working group, advisory group, or steering committee participation shall include presentation of deliverables, KPP's, data management plan, milestone achievements or lessons learned relevant to the fulfillment or creation of roadmap requirements, requesting subject matter expertise support, and consultation for project steering group purposes or as necessary.
17. Finalized, written report (minimum one round of revision with NCDMM required before final submission)

# Evaluation Criteria – Part B: Rapid Casting Demonstration Challenge

- **Executive Summary** (Executive summary is not scored but will be considered as part of the overall value proposition of the proposal.)
- **Technical Approach and Methodology (40%)**
- **Data Management Plan (10%)**
- **Technology Dissemination to America Makes Members and Impact to DoD (40%)**
- **Program Management Approach (10%)**
- **Cost** (Cost and cost share are not scored but will be considered as part of the overall value proposition of the proposal.)

# Proposal and Contracting Information

- Executive Summaries must contain information that is publicly releasable, non-proprietary
  - Purpose
    - To aid in America Makes public release process for award announcement
    - To demonstrate impact and merits of the Institute's efforts to the public
- No fee allowed
- Cover page should include Unique Entity Identifier (UEI) and CAGE of at least the 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

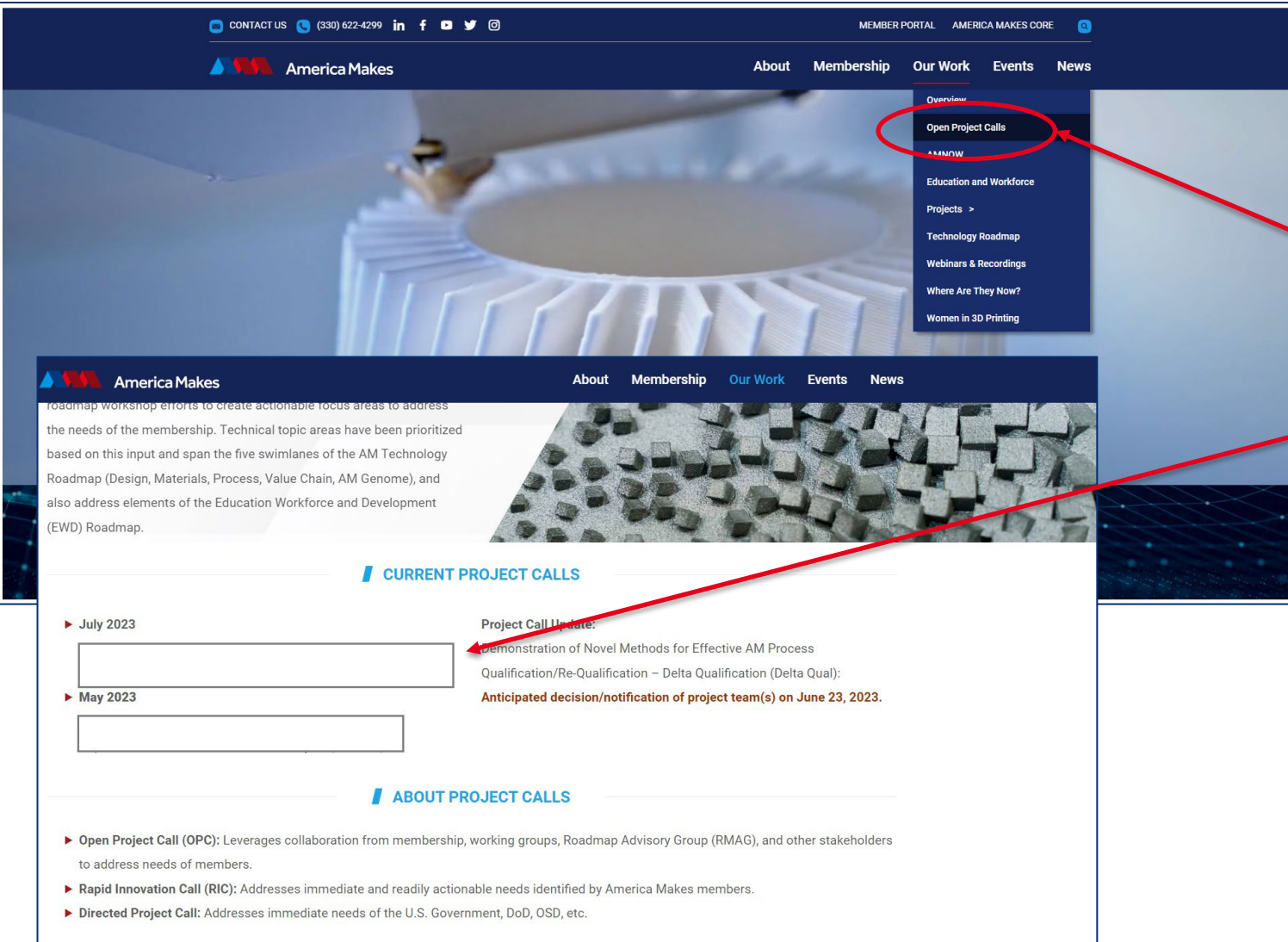
# New Proposal Submission Process for America Makes Project Calls

To begin, use your web browser to navigate to

<https://www.americamakes.us/>

Click on Our Work>Open Project Calls

Once you have navigated to the “Our Work” page, choose the correct project call link from the listed open project calls



The screenshot shows the America Makes website interface. At the top, there is a navigation bar with 'About', 'Membership', 'Our Work', 'Events', and 'News'. A dropdown menu is open under 'Our Work', with 'Open Project Calls' highlighted by a red circle and a red arrow pointing to the text 'Click on Our Work>Open Project Calls'. Below the navigation, the main content area features a section titled 'CURRENT PROJECT CALLS'. Under this section, there are two entries: 'July 2023' and 'May 2023'. The 'July 2023' entry includes a text box and a 'Project Call Update:' section with the text: 'Demonstration of Novel Methods for Effective AM Process Qualification/Re-Qualification – Delta Qualification (Delta Qual): Anticipated decision/notification of project team(s) on June 23, 2023.' A red arrow points from the text 'Once you have navigated to the “Our Work” page, choose the correct project call link from the listed open project calls' to the 'Open Project Calls' link in the dropdown menu. Below the 'CURRENT PROJECT CALLS' section is an 'ABOUT PROJECT CALLS' section with three bullet points: 'Open Project Call (OPC): Leverages collaboration from membership, working groups, Roadmap Advisory Group (RMAG), and other stakeholders to address needs of members.', 'Rapid Innovation Call (RIC): Addresses immediate and readily actionable needs identified by America Makes members.', and 'Directed Project Call: Addresses immediate needs of the U.S. Government, DoD, OSD, etc.'

# Submission Options

America Makes RFP: Powder Alloy Development for Additive Manufacturing (PADAM)

## 1 EXECUTIVE SUMMARY

**Funding Opportunity Title:** Powder Alloy Development for Additive Manufacturing (PADAM).

**Announcement Type:** Directed Project Call. Proposals for projects outside of this topic will not be considered at this time. The funding source for this project call is the Air Force Research Laboratory (AFRL). The effort will feature a total projected funding profile of \$6,000,000.

**Dates:** Proposal submissions must be submitted to America Makes via the Powder Alloy Development for Additive Manufacturing (PADAM) submission form at the following link: <https://www.americamakes.us/project-call-padam/>. Submissions in response to this RFP shall be received no later than 5 p.m. Eastern on Friday, September 29, 2023. Submissions received after the deadline will not be considered.

**Submission Address:** All proposals are to be submitted electronically to <https://www.americamakes.us/project-call-padam/>. The submission link is also available by clicking on the "Submit Proposal" button on the America Makes website under Our Work>Open Project Calls>Powder Alloy Development for Additive Manufacturing (PADAM). *All submissions will be acknowledged upon receipt and with an electronic email confirmation from NCDMM within 24 hours. If a confirmation is not received within 24 hours, please email [projectcall@americamakes.us](mailto:projectcall@americamakes.us) or the technical point of contact listed in Section 5 below to ensure delivery.* NCDMM is not responsible for system malfunctions or undeliverable submissions. It is the proposer's responsibility to ensure their submission has been received.

There are two options to navigate to the submission form and upload your proposal.

Option 1. From the RFP click on the submission link in Section 1 of the RFP to navigate to the submission form where you will enter your information and attach your documents.

Note: If the RFP was not previously downloaded, click the "Download RFP" link on screen below.



Project Call For Applied Research Projects – May 2023

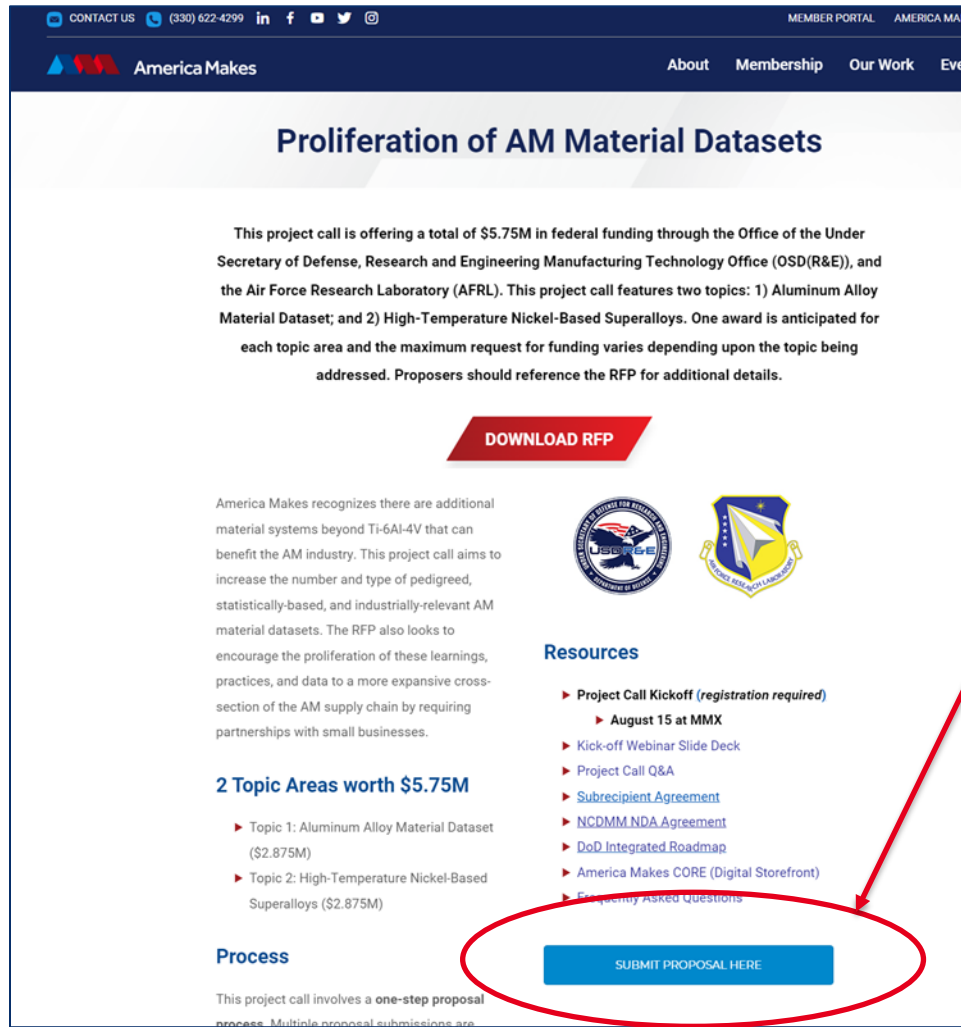
**Improvements in Manufacturing Productivity via Additive Capabilities and Techno-Economic Analysis (IMPACT)**

The directed project call aims to demonstrate productivity and yield benefits for casting and forging manufacturing via additive manufacturing (AM) technologies, execute techno-economic analyses for metal powder AM, and to bridge component sourcing gaps with AM parts for casting and forging applications. In addition, the project call is seeking innovative solutions for robotic AM process planning for continuous fiber-reinforced composite structures.

This project call is offering a total of \$11.7M in federal funding through the Office of the Under Secretary of Defense, Research and Engineering Manufacturing Technology Office (OSD (R&E)), and the Air Force Research Laboratory (AFRL). The RFP includes 10 topic areas of focus. The number of anticipated awards and maximum request for funding varies depending upon the topic area being addressed.

**DOWNLOAD RFP**

# Submission Options



**Proliferation of AM Material Datasets**

This project call is offering a total of \$5.75M in federal funding through the Office of the Under Secretary of Defense, Research and Engineering Manufacturing Technology Office (OSD(R&E)), and the Air Force Research Laboratory (AFRL). This project call features two topics: 1) Aluminum Alloy Material Dataset; and 2) High-Temperature Nickel-Based Superalloys. One award is anticipated for each topic area and the maximum request for funding varies depending upon the topic being addressed. Proposers should reference the RFP for additional details.

**DOWNLOAD RFP**

America Makes recognizes there are additional material systems beyond Ti-6Al-4V that can benefit the AM industry. This project call aims to increase the number and type of pedigreed, statistically-based, and industrially-relevant AM material datasets. The RFP also looks to encourage the proliferation of these learnings, practices, and data to a more expansive cross-section of the AM supply chain by requiring partnerships with small businesses.

**2 Topic Areas worth \$5.75M**

- ▶ Topic 1: Aluminum Alloy Material Dataset (\$2.875M)
- ▶ Topic 2: High-Temperature Nickel-Based Superalloys (\$2.875M)

**Resources**

- ▶ **Project Call Kickoff (registration required)**
  - ▶ August 15 at MMX
- ▶ Kick-off Webinar Slide Deck
- ▶ Project Call Q&A
- ▶ [Subrecipient Agreement](#)
- ▶ [NCDMM NDA Agreement](#)
- ▶ [DoD Integrated Roadmap](#)
- ▶ America Makes CORE (Digital Storefront)
- ▶ [Frequently Asked Questions](#)

**Process**

This project call involves a **one-step proposal process**. Multiple proposal submissions are

**SUBMIT PROPOSAL HERE**

Option 2. Click on the “Submit Proposal” button on the Powder Alloy Development for Additive Manufacturing webpage to navigate to the submission form where you will enter your information and attach your documents.



# Filling in the submission form



Thank you for submitting a proposal for the Powder Alloy Development for Additive Manufacturing (PADAM) Project Call.

Please complete this form to ensure your proposal is successfully received by America Makes.

If you have any questions, contact [projectcall@americamakes.us](mailto:projectcall@americamakes.us).

Name (first and last name of submitter) \*

Email (submitter email, all future correspondence will go to this mailbox including award notification) \*

DUNS

Cage Code

Project Team Lead/Proposal Lead \*

Project Team/Supporting Organizations \*

Proposed Topic Area \*

Federal Funding Requested \*

Cost Share Match/In-Kind Contribution \*

File Upload \*

Select Files

Attestation \*

I attest that I have read the America Makes subrecipient agreement and agree to the terms within. A signed copy is attached.

I attest that I have read the America Makes subrecipient agreement and would like to negotiate some of the terms within. A redlined copy is attached.

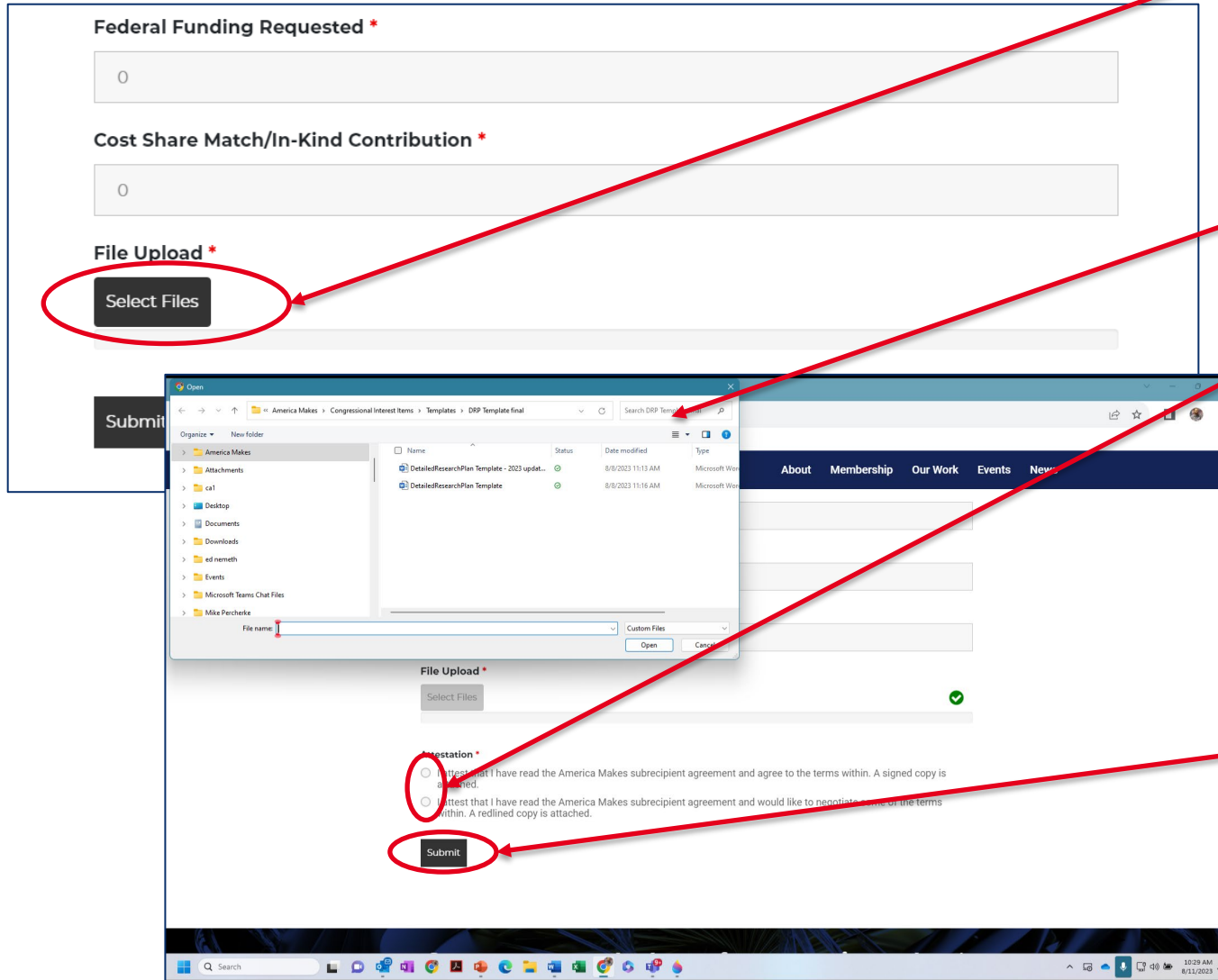
Submit

## Filling in the Submission Form

Note: “\*” indicates required field

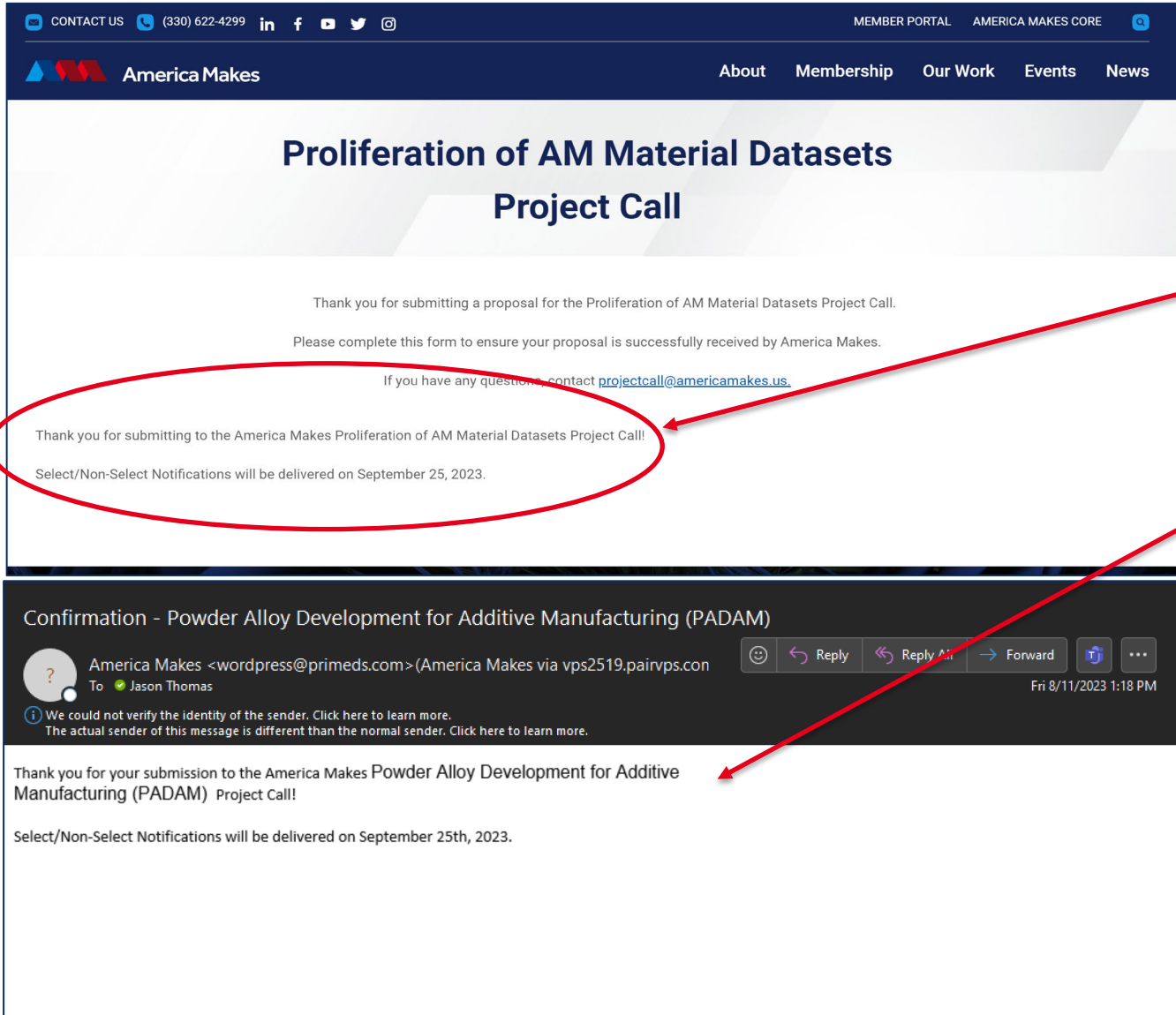
The following fields are required:

1. Name – First and last name of submitter
2. Email – Email address of submitter (all future correspondence including select/non-select notifications will go to this email address)
3. Project Team Lead/Proposal Lead
4. Project Team/Supporting Organizations
5. Proposed Topic Area
6. Federal Funding Being Requested
7. Cost Share Match/In-Kind Contribution
8. Check box confirming that you have:
  - a) You have read and agree to terms in the subrecipient agreement
  - b) You would like to negotiate some terms and have attached a redlined copy of the subrecipient agreement.



- When all fields have been filled completely attach all required documents per Section 3.4 of the PADAM RFP to the form by scrolling to the bottom and clicking on the “Select Files” button.
  - Note: Files can be attached more than once
  
- File Explorer will open allowing you to select files for upload
  
- Choose one of the options regarding the Subrecipient Agreement. (See notes 1 and 2 below)
  - Note 1: If you agree to all terms within the Subrecipient Agreement, please upload a signed copy with all other required documents
  
  - Note 2: If you need to negotiate any terms within the Subrecipient Agreement, please upload a redlined copy of your changes with all other required documents
  
- Click “Submit” to upload your proposal and all required documents

# Submission Confirmation



The screenshot shows two parts: a website confirmation page and an email confirmation. The website page is titled "Proliferation of AM Material Datasets Project Call" and includes a thank you message and a link to [projectcall@americamakes.us](mailto:projectcall@americamakes.us). A red circle highlights the confirmation text on the website. The email is titled "Confirmation - Powder Alloy Development for Additive Manufacturing (PADAM)" and also includes a thank you message and the same link. A red arrow points from the email content to the list on the right.

- Confirmation that your documents were uploaded will be confirmed in two ways.
  - 1) When you click on the “Submit” button, you will receive an on-screen confirmation that your upload was successful
  - 2) You will also receive an email confirming that your upload was successful
- Note: If you do not receive a confirmation within 24 hours it is your responsibility to follow up at [projectcall@americamakes.us](mailto:projectcall@americamakes.us)

# When America Makes America Works

