REQUEST FOR PROPOSALS
RFP-2 WAVE 2

LET US KNOW OF ANY OBJECTIONS PRIOR TO THE WEBINAR’S START
THE MEETING WILL BE RECORDED

Miguel Corcio – Director Technical Programs
Mike Yost – Outreach Advisor
Ann Seman – Membership and Outreach Manager NRMC

WE INVITE YOU TO SHARE IN THE VISION.
• All proposers are strongly encouraged to read the Technical Roadmap and the Request for Proposal (RFP) carefully and adhere to the stated submission requirements.

• This presentation summarizes the RFP. Any inconsistencies between the RFP and this presentation or statements from CESMII personnel, default to the RFP.

• CESMII website https://www.cesmii.org/questions-and-answers/

• If you believe there is an inconsistency, please contact CESMII at roadmapprojects.info@cesmii.org
AGENDA

• CESMII Mission, Strategy, Role, Objectives
• CESMII Technical Roadmap Overview
• RFP Process Overview & Timeline
• RFP-2 Wave 2 Areas of Interest
• Award Information
• Eligibility Information
• Cost Sharing
• Proposal Templates
• Roadmap Project Evaluation Criteria
• CESMII Links & Questions
Improve Energy Efficiency through Sensing, Control, Modeling, Analytics & Platform Technologies

The **home of Smart Manufacturing**

Founded & funded by the US gov in 2017

**Private/public partnership** - $140M over 5 years

We bring together the best minds in the industry to unleash innovation

**Invest in technology, learning & practices aligned with our strategy**

We represent the ‘**Voice of Manufacturing**’

- NOT a Vendor, NO product to sell

We engage the SM Ecosystem through a **membership model**

- Manufacturers on a digital transformation journey
- Vendors looking to innovate
- Academia looking to drive relevance
- SI’s looking to build their digital portfolio
1. **Lead** a national effort to develop, research, test, and widely validate SM technologies and practices in a continuously evolving manner;

2. Develop a roadmap for **SM technologies, practices, services, and training** and update the roadmap periodically as needed;

3. Support SM Research & Development, to provide capabilities for and collaboration in **open, pre-competitive work** among multiple parties;

4. Establish a technical education and **workforce development** program that leverages regional networks;

5. Stimulate **growth of a SM** domestic supply chain;

6. Demonstrate **participation of underrepresented groups** in CESMII; and

7. Be financially **self-sustaining** after the five-year period of federal funding
1. **Energy Productivity**: Energy productivity gains in U.S. manufacturing will be doubled in 10 years.

2. Energy Efficiency: **15% improvement in energy efficiency** in first-of-a-kind industrial testbeds will be achieved within 5 years.

3. Industry Deployment Costs: **Cost of deploying SM technologies** including hardware and software in existing manufacturing processes will be reduced 50% relative to state-of-the-art in 5 years.

4. **Adoption Costs**: Installed and operating cost for adoption of SM technologies including hardware and software will be recovered through energy savings and productivity improvements in 10 years.

5. Workforce: **SM workforce capacity** in U.S. will be increased two-fold by 2020 and five-fold by 2030.

6. Supply Chain: SM supply chain will increase value and participation 40% by 2030.
Realizing Our Mission through An Integrated ROADMAP
### CESMII RFP-2 Wave 2 Timeline

<table>
<thead>
<tr>
<th>Activity</th>
<th>Schedule</th>
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<tbody>
<tr>
<td>Request for proposals issue date</td>
<td>December 5, 2019</td>
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<tr>
<td>1\textsuperscript{st} Information Webinar</td>
<td>December 17, 2019</td>
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<tr>
<td>2\textsuperscript{nd} Information Webinar</td>
<td>December 19, 2019</td>
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<tr>
<td><strong>Submission deadline for whitepapers</strong></td>
<td><strong>January 13, 2020</strong></td>
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<td>Expected date for whitepapers selection</td>
<td>February 3, 2020</td>
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<tr>
<td><strong>Submission deadline for full proposals</strong></td>
<td><strong>March 23, 2019</strong></td>
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<tr>
<td>Expected date for proposals selection</td>
<td>April 20, 2020</td>
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<tr>
<td>Anticipated project start date</td>
<td>July 17, 2020</td>
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AREAS OF INTEREST:
EDUCATION & WORKFORCE DEVELOPMENT
TO LEAD THE CREATION OF A NATIONAL LEARNING INFRASTRUCTURE TO DRIVE 21ST CENTURY MANUFACTURING COMPETITIVENESS THROUGH THE BROAD-SCALE ADOPTION OF SMART MANUFACTURING.
Today’s students represents tomorrow’s SM Professionals and industry leaders. CESMII looks to establish a strong pipeline of students fully aware of and prepared for productive careers leveraging SM to impact their roles, the businesses and their communities. To accomplish this, CESMII is inviting proposals for:

- Creating comprehensive SM curriculum for university and graduate-level engineering students, working closely with industry partners for curriculum requirements.
- Establishing a model for training content creation, delivery methods, trainers and evaluation mechanisms for CESMII SM training and education.
- Develop exemplar manufacturing processes for understanding the end-to-end requirements for smart manufacturing, lessons learned, knowledge gaps identified, and reusable components.
CESMII is “writing the book” to define SM for all manufacturers, machine builders, application vendors, systems integrators and academia in the U.S. manufacturing ecosystem. Through these efforts, CESMII will provide a common, baseline understanding of the SM landscape, inclusive of definitions / vocabulary / terms, goals, challenges and actionable steps required to adopt SM practices, thinking, cultural behaviors and technologies. To accomplish this, CESMII is inviting proposals for:

- Creating and deploying application/project-level assessment instruments, benchmarking tools, maturity models or methodologies to guide manufacturers through their SM journey. Projects must include educating industry in a train-the-trainer model to scale the use of the deliverables.
- Authoring a clear, well-researched SM Lessons Learned Study of global initiatives – an overview of the landscape of standards and competitive analysis of initiatives related to Smart Manufacturing globally. Study must also include the conceptual definitions and differentiation between SM and Advanced Manufacturing (additive, robotics…), Digital Manufacturing, Industrie4.0 and other global SM-related initiatives.
SMART MANUFACTURING DEPLOYMENT AND PRACTICE

a) There is significant value in connecting industry domain experts within the U.S. manufacturing ecosystem to expand the impact in sharing both personal and professional knowledge. Engaging experts in this way can foster open, crowdsourced content in forums, discussions, expert networks and professional interactions that can complement formal educational offerings and raise knowledge throughout the industry.

- Knowledge capture and sharing of industry SM experts’ experiences and expertise, making both readily accessible to U.S. manufacturers through online, community environments for peer-to-peer networking and problem solving.
- Building an Energy Productivity Calculator to map manufacturers’ operational productivity levers (in the form of implemented SM Applications) to improve manufacturing output while maintaining or decreasing energy consumption.

Engage manufacturing industry domain experts at scale
b) Manufacturing executives and enterprise/functional/plant/Operations leaders need a thorough grasp and understanding of SM and how it fits into their plans for sustained success at both the plant and enterprise level. Unfortunately, the disconnect between manufacturing plants and their enterprise’s strategies, metrics and performance is prominent, and CESMII seeks to provide SM language for executives to align their corporate vision with their plants’ operations.

To accomplish this, CESMII is inviting proposals for:

- Creating enterprise-level instruments for engaging manufacturing executives, empowering their teams to assess their organization’s current technological, operational and cultural readiness for SM.
- Building infrastructure for visualizing gaps in alignment of plant and enterprise priorities and initiatives necessary to ensure long-term sustained competitiveness.
- Benchmarking impact areas of SM initiatives on manufacturing enterprises across various industries.
**AWARD INFORMATION:**

Estimated Funding

$700,000 of federal funding available for new awards under Wave II. Projects are required to provide 50% cost share.

<table>
<thead>
<tr>
<th>Technical Areas of Interest</th>
<th>Number of Awards Anticipated</th>
<th>Total Federal Funding Available (RFP-2 Wave II Only)</th>
<th>Member cost-share</th>
<th>Period of Performance</th>
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<tbody>
<tr>
<td>Education &amp; Workforce Development</td>
<td>5</td>
<td>$700,000</td>
<td>$700,000</td>
<td>12 Months</td>
</tr>
<tr>
<td>Total:</td>
<td>5</td>
<td>$700,000</td>
<td>$700,000</td>
<td>12 Months</td>
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PERIOD OF PERFORMANCE

For this RFP, CESMII anticipates making awards with period of performance up to 12 months (but not less than 6 months).

- All projects are state-gated
- At least one Go/No-Go decision point for every BP
- Expected first phase of project to be from July 17, 2020 – June 2020, with a Go/No-Go decision point required at this point.

If applicable, the second phase will occur on January 2021. Additionally, UCLA will negotiate a sub recipient agreements with lead organizations of each of the project teams.
ELIGIBLE APPLICANTS

- MUST BE IN GOOD STANDING BY THE TIME THE PROJECT IS AWARDED TO CESMII
  - Good standing means a completed membership agreement and are current with their annual dues
  - Information regarding CESMII Membership can be found at the CESMII website, https://www.cesmii.org/membership-information/.

- Participation by Foreign Entities
  - Approved CESMII members who are foreign entities may apply for project funding. If any project work will be done in a foreign country, CESMII will work with the project team to complete a Foreign Work Waiver (FWW) that will be submitted to DOE for review and approval.
  - All work to be performed in the US unless a Foreign Work Waiver (FWW) is approved by the DOE
COST SHARING

• The cost share must be at least 50% of the total allowable costs for the project (i.e., the sum of the CESMII share and the recipient share of allowable costs equals the total allowable cost of the project) and must come from non-Federal sources unless otherwise allowed by law.

• Each Project Team is free to determine how best to allocate the cost share requirement among the team members.

• The Team members may provide cost share in the form of cash or in-kind contributions.

• Upon selection for award negotiations, all Project Team Members are required to provide written assurance of their proposed cost share contributions in their final SOPOs. Each organization providing cost share in support of the Project must submit a Letter of Commitment.
PROPOSAL TEMPLATES & SUPPORTING DOCUMENTATION

- RFP-2 Proposal Documentation
- RFP-2 White Paper Template
- RFP-2 Full Proposal Template
- Intellectual Property Management Plan Guidance
- CESMII Intellectual Property Plan
- DOE Intellectual Property Clauses

- The application templates and instructions are available on the CESMII website: [https://www.cesmii.org/resources](https://www.cesmii.org/resources)
SELECTION CRITERIA
(EDUCATION & WORKFORCE DEVELOPMENT)
Whitepapers Selection. Relevance to full proposals selection criteria.

1. **General Criteria**
2. **Technical evaluation Criteria**
3. **Portfolio Selection Criteria**

<table>
<thead>
<tr>
<th>1- General Criteria</th>
<th>Metrics</th>
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<tr>
<td>Educational Area of Interest</td>
<td>• Alignment with a specific CESMII educational area of interest as identified in this Request for Proposal</td>
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<tr>
<td>Project Execution</td>
<td>• Clear project objectives and scope statement (SMART Objectives)</td>
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<td>• High-level project plan to meet milestone dates</td>
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<td>• Key resources identified and confirmation of availability.</td>
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<td>• Complete cost breakdown including sub recipient budget</td>
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<td>• Measure of success</td>
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<td>• Project risks</td>
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### Technical Evaluation Criteria

<table>
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<tr>
<th>Evaluation Area</th>
<th>Description</th>
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<tr>
<td><strong>EWD Merit (Weight: 40.0%)</strong></td>
<td>The extent to which the project addresses the areas of interest stated in this RFP. The extent to which the project, if successfully carried out, will make a valuable contribution to the field of smart manufacturing, CESMII and its members. The project objectives are clearly stated, challenging, well-conceived, and technically feasible. The degree to which this project will provide valuable new tools, educational assets or hardware/software/data to support adjacent Institute activities. Project will materially advance the mission of the Institute.</td>
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<td><strong>EWD Approach (Weight: 35%)</strong></td>
<td>Adequacy and feasibility of the applicant’s approach to achieving the stated objectives of the project. The extent to which the project plan, methods, analysis, and deliverables are properly developed, well integrated, and appropriate to the objectives of the project. Appropriate rationale, and completeness of the proposed Project Proposal. Degree to which the applicant has identified high-risk challenges and presented reasonable mitigation strategies. There is a high degree of innovation, novelty or originality in the approach. Adequacy and appropriateness of the proposed schedule, staffing plan, and proposed travel.</td>
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<td><strong>Project and Management Capabilities (Weight: 25%)</strong></td>
<td>Likelihood that the proposed work can be accomplished within the proposed budget and performance period by the project team, given their experience, expertise, past accomplishments, available resources, institutional commitment, and access to technologies. Clarity, completeness and appropriateness of the project plan and timeline. Clarity, logic, and effectiveness of the project organization, including sub awardees to successfully complete the project. Credentials, capabilities, experience of the key personnel. Adequacy and availability of personnel, facilities, and equipment (both hardware and software) to perform the proposed project within the budget specified.</td>
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Whitepapers Selection. Relevance to:
1. General Criteria
2. Technical evaluation Criteria
3. **Portfolio Selection Criteria**

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<tr>
<th>3- Portfolio Selection Criteria</th>
<th>To create a balanced portfolio CESMII will select projects that are complementary and support the accomplishment of CESMII objectives. This will include but not limited to the following criteria:</th>
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| Criteria                        | 1. Meets strategic goals of the Institute  
2. Fit with current Budget Period (BP) funding profiles  
3. Cross-industry applicability and broad-based impact  
4. Full compliance with DOE and CESMII requirements  
5. Broader base application across other industries for reusability  
6. High-level fit to create balance in the Institute’s project portfolio  
7. Size and depth of the Education and Development of the Industrial Workforce. (Number of people touched and roles in the organization affected) |
WRMC
Dale Turner, Director
• Hosted by UCLA
• Satellite workshop and training centers at key distributed locations.

SRMC
Scott Miller
• Hosted by Texas A&M’s Energy Institute and the Engineering Experiment Station.
• Satellite location at North Carolina State University.

NRMC
Craig Dory, Director
• Hosted at Rensselaer Polytechnic Institute at the George M. Low Center for Industrial Innovation.
• In cooperation with CATS, CCI, LESA, ARM and MILLS.
QUESTIONS CAN BE SUBMITTED TO ROADMAPPROJECTS.INFO@CESMII.ORG

QUESTIONS & ANSWERS CAN BE FOUND AT WWW.CESMII.ORG/QUESTIONS-AND-ANSWERS/

RFP-2 WAVE I RELATED INFORMATION CAN BE FOUND AT WWW.CESMII.ORG/REQUEST-FOR-PROPOSAL

MEMBERSHIP ELIGIBILITY CAN BE FOUND AT HTTPS://WWW.CESMII.ORG/MEMBERSHIP-INFORMATION/

ENGAGE WITH US.

Democratizing SMART MANUFACTURING