

Materials Science and Technology Division

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Refer To: NNMI RFI

Subject: NNMI RFI Response from Los Alamos National Laboratory

NNMI Program Leaders:

Los Alamos National Laboratory (LANL) is interested in responding to the Request for Information for the National Network for Manufacturing Innovation (NNMI) from the NIST-hosted Advanced Manufacturing National Program Office (AMNPO).

- LANL recommends that any call for proposals ***explicitly state that Federally Funded Research and Development Centers (FFRDC)s are eligible to apply.*** This is to prevent the delay or elimination of proposals from Department of Energy National Laboratories based on ambiguities in the interpretation of eligibility requirements.
- LANL recommends that the Request for Proposals (RFP) be written to ***avoid specifying Institute Structure and Governance.*** We suggest that innovative business and governance models ranging from consortia and alliance structures to centers and institute approaches all have merit and should be conceived and proposed based on the nature of the proposers' team and technology domain. Prescriptive constraints on structure and governance at the RFP stage may limit the number of quality proposals for a topic as broad and diverse as Manufacturing Innovation.
- LANL recommends AMNPO ***trust in the Technology Transfer culture between parties and give partners maximum flexibility to implement effective commercialization climates within each Institute. We believe this would deliver the highest value to the nation.*** Overly prescriptive requirements and structures, for example as pertaining to licensing, have been counterproductive in other large partnerships by placing restrictions on approaches that enable rapid transition of technical success to the marketplace.
- LANL believes that success in delivering value to the nation and return on the taxpayer's investment will rely on a number of factors that are well described in the RFI. We suggest that ***the weighting criteria for proposal elements such as the Institute's business models be given proper emphasis and that the review committee be balanced in expertise and outlook*** to evaluate proposals in criteria that are nontechnical. We believe that proposals should be reviewed and selected based on multiple criteria with an emphasis on institute sustainability. While the technical factors will be central to any successful proposal, we believe that they alone will be insufficient to create long-term successes.

- LANL believes proposals that include teams where industry partners have substantial input on critical needs related to manufacturing innovation should receive favorable consideration. We believe that *the needs and potential impacts from an informed industry partner and the attribution of critical needs to qualified private sector leaders are the most credible*. We recommend that proposals be evaluated with strong emphasis given to the degree to which industry is leading and committing to models for workforce development and sustainability.

LANL comments on Technical Thrusts

- LANL recommends a broad definition of Advanced Manufacturing thrusts that permits the enhancement of established industries as well as offers opportunities for commercialization of discovery science. For example, mature US materials production industries can benefit with modest changes that offer low percentage cost reductions per kilogram, but result in substantial economic benefits when considered on an annual production rate. Similarly, novel materials manufacturing methods with controlled functionality can open new device markets for innovative technology.
- LANL requests integrated approaches for experimental and theoretical/computational efforts for advanced manufacturing. A robust methodology for effective utilization of Integrated Computational Materials Engineering (ICME) and Materials Genome Initiatives (MGI) must accommodate an ability to not only push discovery science to technological innovations, but must also satisfy technology pull for enhancing competitiveness of US manufacturing.
- LANL has defined critical needs for sensor, diagnostic, and signal processing methodologies to enhance control of manufacturing processes as well as provide feedback on material lifecycle health and end of life. In-situ definition of material evolution is a critical component of process control and validation/optimization of ICME/MGI efforts.
- LANL recommends technical thrust areas that successfully transition prototype fabrication to commercialization for US Industry in an economically viable manner. While advanced centers may offer unique methods and solutions to manufacturing competitiveness, success will be defined with a translation of methods in an affordable manner. Proposals should articulate how discovery ideas are transitioned into commercial application.

Sincerely,



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