Consortium for Innovation in Manufacturing and Materials (CIMM) Seed Funding

FY 15-16 Request for Proposals

DEADLINE DATES:

Last day for questions and answers about this RFP: **(January 15, 2016)**

Proposals due: (**February 5, 2016)**

RFP ISSUE DATE: (**December 1, 2015)**

LOUISIANA EXPERIMENTAL PROGRAM TO STIMULATE COMPETITIVE RESEARCH (EPSCoR)

Supported by:
The National Science Foundation and the Louisiana Board of Regents

1201 North Third Street, Suite 6-200
Baton Rouge, Louisiana 70802
(225) 342-4253
www.laregents.org

Introduction: The Consortium for Innovation in Manufacturing and Materials (CIMM), an NSF EPSCoR RII Track-1 project, solicits proposals for CIMM Seed Funding to support research projects relevant to CIMM's advanced manufacturing themes. The current Science and Technology Thrusts (STTs) of CIMM address underlying technologies in two areas: 1) STT1 (Multiscale metal forming and replication) addresses challenges in high-throughput manufacturing of components with functional features ranging from microns to millimeters and beyond with high fidelity and repeatability; 2) STT2 (Laser-based 3D metal printing) focuses on adaptive manufacturing of application-specific structures with a high degree of geometric and microstructural complexity and variability. The unifying scientific challenge for these STTs is the multiscale nature of the underlying phenomena, which span multiple length scales (nanometers to millimeters and beyond) and time scales (nanoseconds to hours). A major challenge in multiscale forming is that well-established macroscale manufacturing methods cannot be simply scaled down to the relevant dimensions. To address this, STT1 tightly couples experimentation with modelling and simulation on multiscale plasticity and physics and mechanics of interfacial regions, with focus on mechanical size effects and engineered interfaces. A major challenge in laser-based 3D metal printing is that an understanding of the complex interplay between multi-physics and multiscale phenomena—which are required for tailoring composition and microstructure of printed parts—is presently incomplete. To address this, STT2 couples experimentation with hierarchical modeling and simulation tools, with a focus on laser printing processes and custom powder synthesis. *Experimentally validated models and simulation tools, developed through this effort, will lead to advancement of scientific understanding and acceleration of further technology development.* CIMM's research program also includes the development of data handling and workflow management capabilities to support material and process development within the Integrated Computational Materials Engineering (ICME) framework. CIMM is developing a Central User Facility (CUF) on LSU campus to support advanced manufacturing research and development, and also coordinating a network of user facilities on multiple campuses where CIMM-affiliated users are given access at the same rates charged to the on-campus users. Collectively, these are called CIMM User Facilities (CIMM-CUFs).

Eligibility Guidelines

Individuals who hold a regular tenured or tenure-track or research professors position at any Louisiana public institution of higher education, or at any Louisiana higher education institution that is a member of the Louisiana Association of Independent Colleges and Universities, are eligible to apply. Seed awards are to be single-investigator. While co-PIs are allowable, one and only one individual must be listed on the cover sheet as principal investigator. An individual may submit only one proposal in response to this RFP. The PI should not currently be funded by CIMM.

Award Information

Selection criteria are expected to include (a) the potential for short- and long-term impact on advanced manufacturing, (b) industrial collaborations, (c) utilization of the CIMM-CUFs, and (d) potential to seed unique directions and collaborations within CIMM to advance the two STTs. Priority will be given to junior faculty PIs and collaborative proposals in high-payoff directions aligned with the two STTs. Seed funding is meant to support programs that potentially may grow into externally funded projects aligned with CIMM. Seed funding is also a mechanism by which CIMM hopes to increase the participation of women and under-represented minorities (URM) in the project.

The Seed Funding program will be administered through the BoR's Office of Sponsored Programs and will operate under the guidance of the State's EPSCoR Committee. Maximum award amount for the current year is anticipated to be $25,000. Charges for tuition, salaries

(faculty, postdoctoral researchers, or research associates), and indirect costs are not allowable expenses; award dollars may be used, for example, to support students, travel, and the purchase of scientific equipment and supplies. Any scientific equipment requested must have a strong justification included in the project description. Cost sharing is not required. Funds will be made available by contract from the BoR to the Principal Investigator's (PI) institution.

Award Conditions
Successful applicant is expected to participate fully in the activities of CIMM including providing materials needed for reports, contributing data to the CIMM ICME hub, participation in CIMM meetings (two meetings per year in Baton Rouge; anticipated to be in April and July), responding to data collection requests by the CIMM External Evaluator, reviews by the CIMM External Review Board, and possible participation in NSF Reverse Site Visits (anticipated in 2017 and 2019). All publications and presentations resulting from the seed grant should acknowledge support from NSF EPSCoR RII Track-1 Co-operative Agreement OIA-1541079 and Louisiana Board of Regents.

Schedule

Request for Proposals Released	December 1, 2015
Last Day for Q&A	January 15, 2016
Proposals Due	February 5, 2016
Award Notification	March 15, 2016
Project Dates	May 1, 2016 – April 30, 2017

Proposal Format
Proposals must use 1 inch margins, 11 point font or larger (Arial or Helvetica) and single line spacing. The following outline is to be followed:

- Title page (Please use the one provided with this RFP) Note: list of prospective reviewers must immediately follow the Title Page.
- NSF demographic survey (please use the form provided with this RFP) Note: this information is voluntary.
- Proposed Research (2 pages max)
    - Rationale: discussion of the technical background and engineering/scientific justification. This should include project objectives, justification for the work, e.g., demonstrating that it has not been done before, how it will advance the goals of CIMM.
    - Research Plan: What exactly will be done? How will the objectives be met? What are the motivations, methods, likely outcomes, milestones, and future directions.
- Synergism, Diversity, and Sustainability (1 page max):
    - Synergism: How will the Seed project take advantage of the capabilities of others in the CIMM? What specific collaboration will be used to meet the project goals?
    - Describe the involvement women and/or URM in the project.
    - Describe specific plans for securing external funding beyond the project period.
- References (not included in the page count)
- Budget (Please use the form provided). A one-page budget justification/explanation must also be included.
- Biosketch (2 page limit; use NSF format)

Proposal Submission
The proposal must be submitted to the Board of Regents by the submitting institution's authorized representative no later than the close of business (4:30 p.m.) Friday, February 5, 2016. All online submissions must be uploaded as a **single PDF document** through the

LOGAN system. Proposal submission is a two-step process. Following PI submission, the proposal is routed to your employing institution for review, approval, and final submission to the Board of Regents' EPSCoR office; the Board does not receive and will not accept the proposal directly from the PI. Deadlines listed in the RFP are absolute; all approved proposals must be submitted by the campus and received by the Board on or before the published proposal deadline. The proposal submission system will automatically close at 4:30 p.m. Central on the deadline date.

Instructions for PIs:

- Go to URL: https://web.laregents.org/logan/index.pl
- Login using your LOGAN credentials.
- If you are new user and do not have a LOGAN login, please click on "New user registration" to register.
- If you have logged into LOGAN before and have forgotten your credentials please click "Forgot your password? Reset your account and receive a new system assigned password" to receive a new system-assigned password.
- After logging in, click on "Go >>" next to "CIMM Seed Funding".
- Follow on-screen instructions to complete your proposal.
- Send completed proposal to the appropriate campus office by clicking "Send Proposal to OSP/OSR". A proposal reference number will be assigned after the proposal is successfully sent to the PI's Office of Sponsored Programs/Research.
- An email confirmation of submission to the campus will be sent to the PI with the proposal reference number.
- The OSP/OSR will review the proposal, and, if approved, submit the proposal to the Board of Regents.

Instructions for the OSP/OSR:

- Go to URL: https://web.laregents.org/logan/index.pl
- Login using your Institutional credentials.
- Select "CIMM Seed Funding".
- Follow on-screen instructions to submit the proposal to the Board of Regents' EPSCoR office.
- An email will be sent to both the PI and OSP/OSR to confirm successful submission of the proposal to the EPSCoR office.

If both the PI and the OSP/OSR do not receive confirmation emails within 4 hours, the proposal was not received. Please contact the LA EPSCoR office by phone at 225-342-4253 or by email at support@laregents.org.

Evaluation Criteria

- Potential for short- and long-term impact on advanced manufacturing.
- Potential to seed unique directions within CIMM to advance the two STTs.
- Collaborations with CIMM senior investigators.
- Industrial collaborations.
- Involvement of women and under-represented minorities in research.

Specific questions concerning this RFP and the requirements set forth herein should be directed in writing to Ms. Jessica Patton, Federal Programs Administrator, by sending an email message to jessica.domingue@la.gov. Questions will be accepted and answered through January 15, 2016. A running compilation of all questions asked about this RFP and all answers provided in response to those questions will be periodically posted on the BoR website at http://laregents.org.

2016 CIMM Seed Grants Proposal

1. Applicant's Name, Position & Contact Information

(Last Name) *(First Name)* *(MI)*

(___) (___)
Phone *Fax* *Email*

(Institution) *(Department/Unit)*

(Mailing Address)

(City) *(State)* *(Zip Code)*

PI Status: Tenure-track ☐ Tenured ☐ Non-tenured Research Faculty ☐

Other (please specify): Click here to enter text.

PI Rank: Assistant Professor ☐ Associate Professor ☐ Full Professor ☐

2. Project Title:

3. Project Summary (250 words max):

[Project Summary Word Count: _____ words]

4. Acceptance of Program Requirements: By submitting my proposal electronically, I agree that I have read and understand the program requirements detailed in this RFP under Award Conditions. If awarded, I agree to ensure timely compliance to all program requirements.

PROSPECTIVE REVIEWERS:
Provide the name, title, affiliation, mailing address, telephone number, and e-mail address for at least three out-of-state scholars from the U.S. in the specific field of your proposal who are qualified to evaluate your application and/or who can recommend other individuals who are qualified to evaluate your proposal.

Conflict of Interest Criteria:
Reviewers cannot 1) have been a Louisiana faculty member during the previous five years; 2) have collaborated on a publication, funded project, or as a paid consultant with the applicant during the past five years; 3) have supervised the master's thesis, doctoral candidacy, or post-doctoral work of the applicant, or 4) be affiliated with institutions where the applicant was a student or previously employed.

Name	Title & Affiliation	Phone number and e-mail

2016 CIMM Seed Grants

For National Science Foundation Reporting Purposes Only

Gender: _____ Male _____ Female

Ethnicity: (Choose one response) _____ Hispanic or Latino _____Not Hispanic or Latino

Race: (Select one or more)

_____ Asian _____ American Indian or Alaska Native

_____ Black or African American _____ Native Hawaiian or Other Pacific Islander

_____ White _____ Prefer not to respond

Disability Status:

_____ Hearing Impairment _____ Mobility/Orthopedic Impairment

_____ Visual Impairment _____ Other _____ None

_____ Prefer not to respond

Why this information is being requested:
The National Science Foundation (NSF) is committed to providing equal opportunities for participation in its programs and promoting the full use of the Nation's research resources. To aid in meeting these objectives, NSF requests information on the gender, race, ethnicity and disability status of individuals participating in NSF-sponsored activities. Provision of this information is voluntary.

The above information will be used for NSF reporting purposes only and will not be considered as a precondition of a CIMM Seed Funding award.

SUMMARY PROPOSAL BUDGET					
ORGANIZATION			PROPOSAL NO.	DURATION (MONTHS) Proposed	Granted
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR			AWARD NO.		

A. SENIOR PERSONNEL: PI/PD, Co-PIs, Faculty and Other Senior List each separately with name and title. (A.7. Show number in brackets)	NSF-Funded Person-months			Funds Requested By Proposer	Funds Granted by (If Different)
	CA	ACA	SUMR		
1.				$	$
2.					
3.					
4.					
5.					
6. ( ) OTHERS (LIST INDIVIDUALLY ON BUDGET EXPLANATION PAGE)					
7. ( ) TOTAL SENIOR PERSONNEL (1-6)					
B. OTHER PERSONNEL (SHOW NUMBERS IN BRACKETS)					
1. ( ) POSTDOCTORAL ASSOCIATES					
2. ( ) OTHER PROFESSIONALS (TECHNICIAN, PROGRAMMER, ETC.)					
3. ( ) GRADUATE STUDENTS					
4. ( ) UNDERGRADUATE STUDENTS					
5. ( ) SECRETARIAL - CLERICAL (IF CHARGED DIRECTLY)					
6. ( ) OTHER					
TOTAL SALARIES AND WAGES (A + B)					
C. FRINGE BENEFITS (IF CHARGED AS DIRECT COSTS)					
TOTAL SALARIES, WAGES AND FRINGE BENEFITS (A + B + C)					
D. EQUIPMENT (LIST ITEM AND DOLLAR AMOUNT FOR EACH ITEM EXCEEDING $5,000.)					
TOTAL EQUIPMENT					
E. TRAVEL 1. DOMESTIC (INCL. CANADA, MEXICO AND U.S. POSSESSIONS)					
2. FOREIGN					
F. PARTICIPANT SUPPORT 1. STIPENDS $ _____ 2. TRAVEL _____ 3. SUBSISTENCE _____ 4. OTHER					
TOTAL NUMBER OF PARTICIPANTS ( ) TOTAL PARTICIPANT COSTS					
G. OTHER DIRECT COSTS					
1. MATERIALS AND SUPPLIES					
2. PUBLICATION/DOCUMENTATION/DISSEMINATION					
3. CONSULTANT SERVICES					
4. COMPUTER SERVICES					
5. SUBAWARDS					
6. OTHER					
TOTAL OTHER DIRECT COSTS					
H. TOTAL DIRECT COSTS (A THROUGH G)					
I. INDIRECT COSTS (F&A) (SPECIFY RATE AND BASE)					
TOTAL INDIRECT COSTS (F&A)					
J. TOTAL DIRECT AND INDIRECT COSTS (H + I)					
K. RESIDUAL FUNDS (IF FOR FURTHER SUPPORT OF CURRENT PROJECT SEE GPG II.D.7.j.)					
L. AMOUNT OF THIS REQUEST (J) OR (J MINUS K)				$	$
M. COST SHARING: PROPOSED LEVEL $	AGREED LEVEL IF DIFFERENT: $				