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

Track 1: Faculty Research Awards

FY 19-20 Request for Proposals:

DEADLINE DATES:

RFP ISSUE DATE: (**September 9, 2019)**

Last day for questions and answers about this RFP: **(October 4, 2019)**

Proposals due: (**November 11, 2019, 4:30 PM Central Time)**

LOUISIANA ESTABLISHED PROGRAM TO STIMULATE COMPETITIVE RESEARCH (EPSCoR)

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

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Introduction: The Consortium for Innovation in Manufacturing and Materials (CIMM), an NSF EPSCoR RII Track-1 project, solicits proposals for CIMM Seed Funding Track 1: Faculty Research Awards to support research projects relevant to CIMM's advanced manufacturing themes as well as emerging areas of data-driven materials science and machine learning with applications to manufacturing. 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 has established an ecosystem of User Facilities at LSU and Louisiana Tech to support advanced manufacturing research and development and is expanding this network of user facilities where CIMM-affiliated users are given access at the same rates charged to the on-campus users. Collectively, these are called CIMM Core User Facilities (CIMM-CUF). Additional information about CIMM can be found at http://www.lsu.edu/eng/cimm/index.php.

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. 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-CUF, 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 Track 1: Faculty Research Awards program will be administered through the BoR's Office of Sponsored Programs and will operate under the guidance of the State's EPSCoR Committee. The awards are anticipated to be $10,000. Renewal requests will be considered (see Proposal Format section). Multiple proposals (one renewal and one new proposal) from the same PI will also be considered. Charges for tuition and senior personnel salaries (faculty, postdoctoral researchers, or research associates) 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. Institutions are strongly encouraged to waive the F&A on these awards so as to maximize the impact of the seed grants.

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, and reviews by the CIMM External Review Board. 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	September 9, 2019
Last Day for Q&A	October 4, 2019
Proposals Due	November 11, 2019
Award Notification	December 2, 2019
Project Dates	January 1, 2020 – July 31, 2020

(It is the intention of the Board of Regents to request a six-month no-cost extension on the parent award from NSF.)

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)
- 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 program? What specific collaboration will be used to meet the project goals?
    - Describe the involvement of women and/or URM in the project.
    - Describe specific plans for securing external funding beyond the project period.
- Renewal applications should also include a clearly delineated paragraph summarizing

accomplishments under previous funding and the rationale for renewal within the 2+1 page limit.
- 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 day (4:30 p.m.) on Monday, November 11, 2019. 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 Standard Time 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 Track 1".
- 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 Track 1".
- 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.

Modules for proposal submission in LOGAN will be available as of September 12, 2019.

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.
- Establish and/or expand 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.patton@laregents.edu. Questions will be accepted and answered through October 4, 2019. 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://web.laregents.org.

2020 CIMM Seed Grants Proposal
Track 1: Faculty Research Awards

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 ☐

Is this a renewal application: Yes ☐ No ☐

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

2020 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 Associates List each separately with name and title. (A.7. Show number in brackets)	NSF-Funded Person-months CA	ACA	SUMR	Funds Requested By Proposer	Funds Granted by (If Different)
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: $				