

**Louisiana Materials Design Alliance
(LAMDA)
Seed Funding
Track 1 B: Collaborative Partnership
Award**

FY 21-22 Request for Proposals:

DEADLINE DATES:

RFP ISSUE DATE: (October 22, 2021)

Last day for questions and answers about this RFP: (November 12, 2021)

Proposals due: (November 30, 2021, 4:30 PM Central Time)



LA EPSCoR

**LOUISIANA ESTABLISHED 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 Louisiana Materials Design Alliance (LAMDA), an NSF EPSCoR RII Track-1 project, solicits proposals for LAMDA Seed Funding Track 1 B: Collaborative Partnership Award to support research projects relevant to LAMDA’s research themes. LAMDA’s research program represents a convergence of machine learning (ML), experimental and computational materials science and engineering (MS&E), and additive manufacturing (AM). The vision of LAMDA is to propel the State to a nationally competitive position in the field of ML-guided materials design for AM.

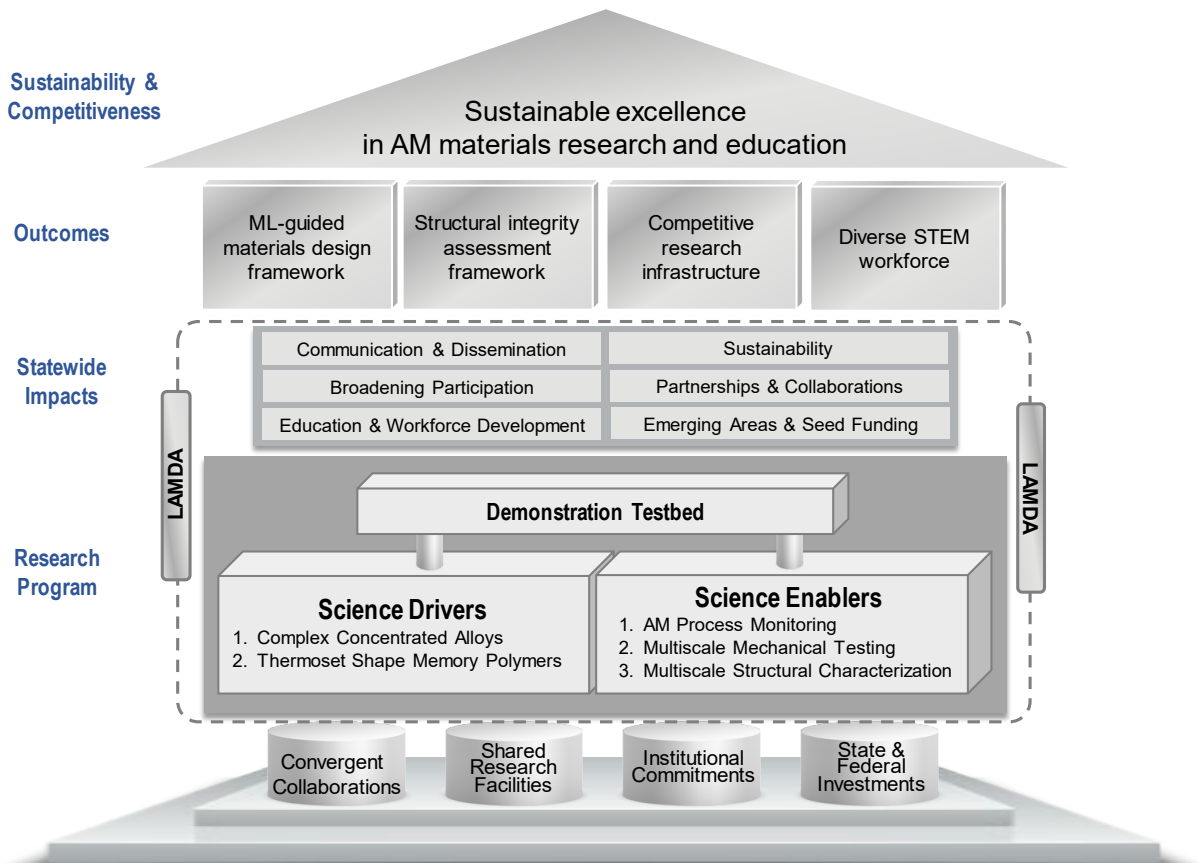


Figure 1. LAMDA strategic research and education roadmap to achieve goals and vision.

The research road map of LAMDA is shown in Figure 1. As illustrated in the roadmap, the LAMDA research program is anchored by two Science Drivers: Complex Concentrated Alloys (CCAs) with balanced mechanical performance (SD-1) and AM-compatible Thermoset Shape Memory Polymers (TSMPs) with enhanced service life (SD-2). Using ML-guided materials design, LAMDA research will predict composition and processing variables for CCAs and TSMPs capable of meeting multi-criteria specifications. The SDs are supported by three Science Enablers (SEs): AM Process Monitoring (SE-1), Multiscale Mechanical Testing and Simulations (SE-2), and Multiscale Structural Characterization (SE-3). Detailed data from AM-process monitoring, structural characterization across length scales, and multiscale mechanical property measurements will provide the foundations for an ML-guided framework for AM materials design and structural integrity assessment, positioning LAMDA for sustainable excellence in AM materials research and education.

This RFP is for the LAMDA Seed Funding Track 1 B: Collaborative Partnership Award program. Partnership projects are designed to create collaborations between a pair of researchers, namely 1) Applicant/Principal Investigator (PI), a non-LAMDA member, and 2) Collaborator, a LAMDA investigator or a LAMDA seed grant recipient. The proposed topics must be relevant to LAMDA research activities as stated in the LAMDA Strategic Plan. The list of LAMDA investigators can be found in the appendix.

Eligibility Guidelines

Individuals who hold a regular tenured or tenure-track or research faculty 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. One and only one individual must be listed on the cover sheet as principal investigator. The PI should not currently be funded by LAMDA. The PI may apply for only one of the Track 1 awards, i.e. a Single Investigator Award **or** a Collaborative Partnership Award in this funding cycle.

Award Information

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

The Seed Funding Track 1 B: Collaborative Partnership Award program will be administered through the BoR's Office of Research and Sponsored Initiatives and will operate under the guidance of the State's EPSCoR Committee. The awards are anticipated to be \$35,000 – \$40,000 for a Partnership Award. Renewal requests will be considered (see Proposal Format section). Charges for student tuition are not allowable expenses. 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. F&A (indirect) is limited to 25% of total salaries, wages, and fringe benefits.

Award Conditions

Successful applicant is expected to participate fully in the activities of LAMDA including providing materials needed for reports, participating and presenting in LAMDA meetings (two meetings per year in Baton Rouge; anticipated to be in April and July), responding to data collection requests by the LAMDA External Evaluator and recommendations made by the LAMDA External Review Board. All publications and presentations resulting from the seed grant should use the following acknowledgment statement, "This work is supported by the US National Science Foundation under grant number OIA-1946231 and the Louisiana Board of Regents for the Louisiana Materials Design Alliance (LAMDA)."

Schedule

Request for Proposals Released	October 22, 2021
Last Day for Q&A	November 12, 2021
Proposals Due	November 30, 2021
Award Notification	December 20, 2021
Project Dates	January 1, 2022 – Dec 31, 2022

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.

- Project Description (8 pages max)
 - Proposed Research
 - 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 LAMDA, and how it will support the LAMDA activities as stated in the LAMDA Strategic Plan.
 - 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 (2-page max within the 8-page total)
 - Synergism: How will the Seed project take advantage of the capabilities of others in the LAMDA program? What specific collaboration will be used to meet the project goals?
 - Involvement of women and/or URM in the project.
 - 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 8-page limit.
- References (not included in the page count)
- Sponsored Programs Approval Letter (template provided). Must indicate approval of the submission of the proposal by the submitting institution's sponsored programs authorized representative. If this is not received, the proposal will be returned without review.
- Budget (Please use the form provided). A one-page budget justification/explanation must also be included. The Budget page must be approved and signed by the submitting institution's authorized representative.
- Biosketch (2-page limit; use NSF format)

Proposal Submission

The proposal must be submitted by the PI to the Board of Regents through the LA EPSCoR online submission system, <https://laepscor.piestar-rfx.com/opportunities>, no later than the close of business day (4:30 p.m.) on Tuesday, November 30, 2021. All proposals must include a certification letter that the proposal has been approved by the submitting institution's authorized representative, see requirement in the Proposal Format section above.

Evaluation Criteria

- Potential for short- and long- term impact on ML-guided materials design for AM.
- Potential to seed unique directions within LAMDA to advance the two SDs.
- Collaborations with LAMDA 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 November 12, 2021. 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>.



2021-22 LAMDA Seed Grants Proposal

Track 1 B: Collaborative Partnership Award

1. Applicant's Name, Position & Contact Information

<hr/>		
<i>(Last Name)</i>	<i>(First Name)</i>	<i>(MI)</i>
<hr/>	<hr/>	<hr/>
<i>()</i>	<i>()</i>	
<i>Phone</i>	<i>Fax</i>	<i>Email</i>
<hr/>		
<i>(Institution)</i>	<i>(Department/Unit)</i>	
<hr/>		
<i>(Mailing Address)</i>		
<hr/>		
<i>(City)</i>	<i>(State)</i>	<i>(Zip Code)</i>

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.

2021-22 LAMDA 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 LAMDA Seed Funding award.

SUMMARY PROPOSAL BUDGET						
ORGANIZATION		PROPOSAL NO.		DURATION (MONTHS)		
				Proposed	Granted	
PRINCIPAL INVESTIGATOR/PROJECT DIRECTOR		AWARD NO.				
A. SENIOR PERSONNEL: PI/PI, Co-PIs, Faculty and Other Senior Associates List each separately with name and title. (A.7. Show number in brackets)		NSF-Funded			Funds Requested By Proposer	Funds Granted by (If Different)
		Person-months				
		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: \$				

INSTITUTION
Authorized Sponsored Programs
Representative Office

<Date>

Ms. Jessica Patton
Federal Program Administrator
Board of Regents, State of
Louisiana 1201 North 3rd Street,
Suite 6-200 Baton Rouge, LA 70802

Dear Ms. Patton:

<Institution> agrees to participate as a subrecipient in the proposed project entitled "**<Title>.**" The <institution> portion of the work as described in the attached proposal will be under the primary direction of <principal investigator>.

The amount requested for <institution>'s participation in this research project is **<total budget amount>**. <Institution> has reviewed and approved the budget and budget justification for this proposal.

We look forward to a rewarding and productive research effort.

Sincerely,

<Authorized Organization Representative>

<Office of Authorized Organization Representative>

Enclosures: <Any necessary attachments>

Appendix. LAMDA team members

Table 1: LAMDA Senior Investigator Research Focus

First Name	Last Name	Institution	Email Address	SD-1	SD-2	Data-Enabler	SE-1	SE-2	SE-3
Michael	Khonsari	BoR/LSU	khonsari@lsu.edu	*				*	
Shengmin	Guo	LSU	sguo2@lsu.edu	*				*	
Miao	Jin	ULL	mxj9809@louisiana.edu			*			
Guoqiang	Li	SU/LSU	guoqiang_li@subr.edu lguoqi1@lsu.edu		*			*	
Arden	Moore	LaTech	amooore@latech.edu				*		
Jihun	Hamm	Tulane	jhamm3@tulane.edu			*			
Blaise	Bourdin	LSU	bourdin@lsu.edu					*	
Les	Butler	LSU	lbutler@lsu.edu				*		*
Xin	Li	LSU	xinli@lsu.edu			*			
Wenjin	Meng	LSU	wmeng1@lsu.edu	*				*	*
Dimitris	Nikitopoulos	LSU	medimi@lsu.edu						
Genevieve	Palardy	LSU	gpalardy@lsu.edu		*				
John	Pojman	LSU	japojman@lsu.edu		*				
Philip	Sprunger	LSU	phils@lsu.edu	*					*
Mingxuan	Sun	LSU	msun11@lsu.edu			*			
Jian	Zhang	LSU	zhang@csc.lsu.edu			*			
Jinyuan	Chen	LaTech	jinyuan@latech.edu			*			
Xiang (Shawn)	Chen	LaTech	shawnxc@latech.edu	*	*			*	
Arun	Jaganathan	LaTech	arun@latech.edu				*		
Erica	Murray	LaTech	emurray@latech.edu	*					
Andrew	Peters	LaTech	apeters@latech.edu		*				
Ramu	Ramachandran	LaTech	ramu@latech.edu	*					
Collin	Wick	LaTech	cwick@latech.edu	*	*	*			
Fareed	Dawan	SU	fareed_dawan@subr.edu		*				
Samuel	Ibekwe	SU	SAMUEL_IBEKWE@subr.edu		*				
Patrick	Mensah	SU	PATRICK_MENSAH@subr.edu		*				
Henry	Chu	ULL	chu@louisiana.edu			*			
Xiali	Hei	ULL	xiali.hei@louisiana.edu			*			
Ahmed	Khattab	ULL	ahmed.khattab@louisiana.edu		*				
Jonathan	Raush	ULL	jonathan.raush@louisiana.edu	*				*	
Xiao-Dong	Zhou	ULL	xiao-dong.zhou@louisiana.edu	*					*