

HR001117S0014 Nascent Light Matter Interactions
Frequently Asked Questions (FAQs)
as of 1/12/18

42Q: Given the possibility of budget constraints for the NLM program, should there be a prioritization of tasks in the Cost Volume of our proposal?

42A: The Cost Volume should clearly indicate the priority of each task with respect to the other tasks proposed. Tasks that teams consider vital to the success of the proposed research in meeting the NLM goals should be marked as such. Tasks that seem important and valuable to investigate, but are not essential to addressing the NLM goals, should be indicated as such and ideally broken out as options.

▲▲▲▲ New Questions and Answers ▲▲▲▲

41Q: When will proposers receive a response to submitted abstracts?

41A: While it is DARPA policy to attempt to reply to abstracts within thirty calendar days, proposers to this solicitation may anticipate a response within approximately three weeks. These official notifications will be sent via email to the Technical POC and/or Administrative POC identified on the abstract coversheet.

40Q: Are there any restrictions on payments under this grant program to researchers for their work on the project who aren't U.S. citizens?

40A: There are no restrictions to grant funds for the payment of salaries or supplies under this grant program on researchers work on the project who aren't U.S. citizens. However, please refer to FAQ 8A that program participants will need to comply with any necessary nondisclosure agreements, security regulations, export control laws, and other governing statutes applicable under the circumstances. Please see Section III.A.2 of the BAA for more information.

39Q: The abstract template requests links in the bibliography to relevant papers, references, and resumes. Do you suggest a Dropbox (or similar) cloud storage folder containing actual pdfs of the relevant papers, references, and resumes?

39A: No actual papers or pdfs should be provided. As stated in the attachment 2 instructions, the bibliography should not exceed 2 pages. Any reference may be hyperlinked, if a hyperlink is available.

38Q: How detailed of a cost breakdown is required in the abstract?

38A: You are welcome to provide as much detail as you like, provided you stay within the page limit. An estimate of resources such as labor and material over the total 48 month program broken down by Phase is all that is requested for the abstract.

37Q: We have been looking at "X" physical process. Is it of interest?

37A: If you feel that your approach is within the technical scope of the BAA, you should submit an abstract. Proposers are strongly encouraged to submit an abstract as described in the BAA. This process will provide you feedback on whether your proposed concept is applicable to the NLM BAA and, more importantly, whether it is of interest.

36Q: From the Focus Areas listed we couldn't tell whether our topic would be relevant.

36A: The key expectation for success in this program is that visionary approaches are proposed leading to models that significantly extend our present ability to predict, manage, and exploit light-matter interactions. We need proposers to identify and then develop new and emerging

concepts that advance how we control electromagnetic waves leading to significant improvements in the state of the art in one or more focus areas. The list of possible focus areas provided is not exhaustive.

35Q: During the webinar, it was stated that Phase III would be by invitation to a known DARPA problem. How are we to estimate costs for that?

35A: In the BAA, Section II.D, it states that proposals should address all three phases and provide details for Phase I and Phase II, and a rough order of magnitude (ROM) for Phase III. This assumes the proposer has a plan and targets goals for Phase III. Prior to the completion of Phase II (at approximately Month 24), DARPA will request updated technical and cost proposals for Phase III per specifications/guidance provided by DARPA. This guidance will be provided based on Phase II progress and stakeholders' inputs but consistent with and tailored to the proposer's original ROM for Phase III.

34Q: Should we emphasize the development of existing theoretical framework/models or focus instead on new mechanisms and models?

34A: Focusing on new theoretical frameworks and models is strongly preferred.

33Q: Although we may easily focus on engineering a final product, we are shaping the abstract around the innovatory science and modeling techniques, rather than about engineering metrics and specs and a device specifics. Is that a right approach?

33A: This is the correct approach, especially for Phase I. The model should be predictive in terms of innovative properties that can be investigated/exploited later in the program.

32Q: We are using nanoHUB.org as a collaborative online platform, would it be something that could work for your program?

32A: Potentially; please clearly detail how your idea will meet the goals of the BAA in an abstract.

31Q: Are some possible industry partners also "stakeholders"?

31A: No. Stakeholders are Government employees.

30Q: Is there a page limit for an Abstract?

30A: Yes. Abstracts shall not exceed a maximum of 5 pages. Please refer to the Abstract Template (posted as Attachment 2 in the announcement available at <https://www.fbo.gov/>).

29Q: We have recently developed a new material platform for integrating materials into thin films. In these new nanoscale metamaterials, we have seen large materials selectivity and a large flexibility in property tuning. Is this of interest to NLM?

29A: The topic you describe below is interesting, namely control of light matter interactions on the nm scale. Dynamic tuning is also of interest. It is important to convey how your approach is not incremental and i) advances fundamental concepts and ii) develops models that enable predictions about how specific integrated/structured materials will behave under different conditions. What tuning ranges might the properties you mention span and are they significantly greater than is possible currently? Through the NLM program, we want to develop theory-anchored models that can expand the state of the art either in already-observed phenomena or in never-before-realized and new functionality. We expect to identify building blocks which can then lead to a systematic design approach for controlling electromagnetic waves through these materials by providing rigorous predictive models and design tools. If you can address these

requirements then the platform you are working on would be appropriate and could provide a technical focus for later phases of the program.

28Q: Can the same PI appear listed in more than one abstract if involved with multiple teams with non-overlapping (separate) proposed ideas? If it is possible to be part of more than one abstract paper and if these abstracts are selected and invited for the full proposals, should that person choose to be only part of one team/full proposal? Or can he/she be part of more than one team/full proposal?

28A: Yes, same PI can appear listed in more than one abstract however, please be aware that awards for duplicative work will not be made. Team members should also propose realistic levels of effort needed to successfully accomplish each of their proposed technical approaches.

27Q: Is there any specific requirement or restriction on collaborating with European and/or other international partners, other than that specified in Section III.A.2 of the BAA? If yes, is this considered negatively?

27A: All responsible sources capable of satisfying the Government's needs may submit a proposal for DARPA's consideration. If an international partner is unable to comply with any necessary nondisclosure agreements, security regulations, export control laws, and other governing statutes applicable under the circumstances, this could adversely affect the submission. In addition to Section III.A.2 of the BAA, information on these subjects can be found at http://www.dss.mil/isp/foci/foci_faqs.html.

26Q: The abstract template states that abstracts should not exceed 5 pages. Does this mean sections 2-5 in the table of contents will be total of 5 pages, as other information does not count against the page limit?

26A: Yes, sections 2-5 of the abstract template may not exceed 5 pages (*including all figures, tables, charts*). Please refer to the Abstract Template of this BAA for format and page limitations.

25Q: Is it important to have a connection to industry?

25A: No.

24Q: In accordance with the BAA, Part II, Paragraph D. Program Structure, participation in Phase III is optional and will be limited to successful Phase II performers. Can a team of successful Phase II performers revise its program structure by recasting a subcontractor to lead as prime for Phase III?

24A: No. Awards are to Prime contractors and the options exist under these awards. A subcontractor as prime would require the novation of an existing award.

23Q: I have a DUNS number and CAGE code from a proposal I submitted to another defense organization last year. Will these numbers be the same for this DARPA call?

23A: Yes, as long as your DUNS number and CAGE code are active and current. Please refer to Section VI.B.2 and 3 for additional instructions regarding the DUNS number and CAGE code.

22Q. Section 5 of the Abstract Template (attachment 2) asks us to, "Provide a cost estimate...over the 18 months." Is not the full program 48 months?

22A: The cost estimate should be provided for 48 months of the program. This was an oversight and Section 5 of the Abstract Template should be corrected to 48 months.

21Q: Are biologically inspired materials within a scope of NLM program?

21A: Biologically inspired materials may be in the scope of the NLM program. The important point is that the NLM program is seeking approaches that advance fundamental concepts and develop models that enable predictions about how specific structured materials will behave under

different conditions. We want to develop theory-anchored models that can expand the state-of-the-art either in already-observed phenomena or in never-before-realized and new functionality. Through NLM we expect to identify building blocks which can then lead to a systematic design approach for controlling electromagnetic waves through these materials by providing rigorous predictive models and design tools. If you can address these requirements then the material systems you are working on could be appropriate and provide a technical focus for later Phases of the program.

20Q: We have developed methods to study material optical properties which suggest possibly new phenomena. Is this of interest?

20A: It is important to be clear what new knowledge might be forthcoming and what it will enable. Is there likely to be a new predictive model which will lead to a new design tool, and that predicts some significant new performance capabilities?

19Q: We have a new inverse design method for composite materials. Is it of interest?

19A: It is of interest if it provides a design tool and includes resonant or nonlinear properties that predict properties which exceed the usual Hashin-Shtrikman-like bounds on effective media.

18Q: Can one submit multiple proposals to this BAA?

18A: Yes. DARPA will review all conforming full proposals using the published evaluation criteria.

17Q: Can experiments and theory efforts run in parallel in Phase I?

17A: Yes, provided new material properties of interest originate from new material models that lead to design tools.

16Q: Are optimization algorithms for structure-design of linear or nonlinear metamaterials of interest?

16A: Yes, if families of solutions obtained this way provide new insights into building blocks.

15Q: My group could be a good partner for an experimental effort but not the theory part. What should I do?

15A: Proposers who cannot fully address the requirements of the BAA alone should consider teaming. Please see Section VIII.B (page 29) of the BAA regarding Collaborative Efforts/Teaming. Team formation is the sole responsibility of the proposer. Teams need not be finalized at the time of abstract submission.

14Q: How many teams are likely to be funded partners?

14A: DARPA anticipates multiple awards. The level of funding for individual awards made under this BAA will depend on the quality of the proposals received and the availability of funds. There are no specific expectations on numbers of teams or team sizes, but by Phase III we do hope there will be three or four varied application directions. Please see Section V of the BAA for more information on how proposals will be evaluated.

13. Should teams include industry and government partners?

13A. The SOW may or may not benefit from industry or government partners depending on the tasks proposed.

12Q: Is it possible to include collaborators from DoD Labs/FFRDCs?

12A: Yes.

11Q: If a team includes a Government Entity/FFRDC, would the money be budgeted for and disbursed in the normal way?

11A: The overall team budget should be reported in the Cost Volume. The prime should not include any overhead costs for the financial management of a Government Entity/FFRDC subcontractor proposal. If selected for an award, any funding to a Government Entity/FFRDC would be disbursed directly to the Government Entity/FFRDC.

10Q: Are FFRDCs/Government entities eligible to propose to this BAA?

10A: The FFRDC/Government entity should be able to provide their proof of eligibility to propose to the BAA. Such eligibility allows certain FFRDCs/Government entities to compete against industry under the terms of the BAA. Any FFRDC/Government entity seeking an intergovernmental agreement should not propose to the BAA but should respond to the DARPA Program Manager directly. Please refer to Section III.A.1 of the BAA for more information.

9Q: Do I need to submit an abstract in order to have a full proposal considered?

9A: No, but proposers are *strongly encouraged* to submit an abstract as described in the BAA. This process will provide you feedback on whether your proposed concept is applicable to the NLM BAA and, more importantly, whether it is of interest.

8Q: Do proposers need to have a green card or be U.S. citizens?

8A: No. However, program participants will need to comply with any necessary nondisclosure agreements, security regulations, export control laws, and other governing statutes applicable under the circumstances. Please see Section III.A.2 of the BAA for more information.

7Q: Is a team necessary to submit the proposal or can I submit the proposal as a single PI?

7A: The only requirement is that you can address all of the requirements specified in the BAA.

6Q: We note that part of the program called for proof-of-concept demonstrations. Can you clarify for us whether DARPA intends for those demonstrations to be purely theoretical, or whether they can be experimental?

6A: In Phase II, proof-of-concept demonstrations might be purely theoretical/numerical, but experiments are strongly encouraged. By Phase III, DARPA expects experimental verification of predicted parameters and validation of design tools by demonstrating the selected new techniques for the control of light-matter interactions, in one or more technical focus areas.

5Q: Can one propose just something on theory and modeling? Is fabrication and test required? For example if Phase I is just theory, and a team wants to just focus on theory, then in Phase II does an experimental team have to get involved?

5A: Proposals should address all three phases and provide details for Phase I and Phase II, and a rough order of magnitude for Phase III. Performers are expected to experimentally verify predicted parameters and validate their design tools by demonstrating new techniques for the control of light-matter interactions in one or more focus areas. If experimental expertise is not readily available, DARPA highly encourages teaming before proposal submission and can facilitate the formation of teams with the necessary expertise. Interested parties should submit a one-page profile to nlm@darpa.mil no later than 4:00 p.m. December 5, 2017. Please see Section VIII.B of the BAA for more information on teaming.

4Q: Are there any guidelines or recommendations on the number of investigators or the budget size for a team?

4A: The level of funding for individual awards made under this BAA will depend on the quality of the proposals received and the availability of funds. There are no additional guidelines other than to say that we do expect proposed tasks to be sufficiently ground-breaking, high risk, and challenging. This suggests expertise from a variety of sources might be needed. As stated in the BAA, a proposal will first be evaluated based on its relevance to the NLM goals, and then assessed as to whether the proposed budget, in terms of manpower, expertise, materials etc., is realistic for the tasks/statement of work. Please see Section V of the BAA for more information on how proposals will be evaluated.

3Q: We have a large experienced team working on a specific system already supported by DARPA but which only partly overlaps with NLMs goals. Should we submit?

3A: The NLM program is seeking approaches that advance fundamental concepts and develop models that enable predictions about how specific structured materials will behave under different conditions. We want to develop theory-anchored models that can expand the state of the art either in already-observed phenomena or in never-before-realized and new functionality. Through NLM we expect to identify building blocks to which can then lead to a systematic design approach for controlling electromagnetic waves through these materials by providing rigorous predictive models and design tools. If you can address these requirements then the system you are working on could be an appropriate technical focus, especially for later phases of the program.

2Q: How do I find the BAA?

2A: The BAA is available on the Federal Business Opportunities website (<https://www.fbo.gov/spg/ODA/DARPA/CMO/HR001118S0014/listing.html>) and the DARPA Opportunities website (<https://www.darpa.mil/work-with-us/opportunities>)

1Q: How do I find the Proposers Day webinar?

1A: The webinar is available at <https://youtu.be/wE1c17V-50Q>.