National AI Research Institutes Webinar Script **November 7, 2019, 3:30-4:30 EST**

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1. (TITLE) National Artificial Intelligence (AI) Research Institutes: Accelerating Research, Transforming Society, and Growing the American Workforce

Good afternoon, and thank you for joining this webinar. I am Jim Donlon. I am a program director in the Division of Information and Intelligent Systems of CISE and lead program director for the National AI Research Institutes program. I am joined today by Rebecca Hwa, also a program director in CISE/IIS, and co-lead for the program.

Before we start, I would like to outline the schedule: The webinar will be one hour in duration; we will present for approximately 30-40 minutes, and then we'll take questions for the remainder of the hour. We will take your questions through the program mailbox shown here. You may send your question at any time.

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2. National Artificial Intelligence (AI) Research Institutes Points of Contact

National AI Research Institutes is a Crosscutting and multi-agency program, represented by program directors from all NSF research and education directorates, as well as by key program officers representing the artificial intelligence priorities of our partner agencies. The key program points of contact are listed here. They are also listed in the program solicitation, with additional information about which program officers serve as primary POCs for this year's institute themes.

Several other program points of contact are present for the webinar, including some who will speak later in this webinar on behalf of Institute themes.

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3. Welcome

Let me begin by calling on Erwin Gianchandani, the Deputy Assistant Director and Acting Assistant Director in CISE, to welcome you and to say a few words about this new national initiative.

[Erwin Gianchandani comments]

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4. Outline

Thank you, Erwin. The discussion today is intended to introduce you to the National AI Research Institutes program, and to help you prepare and submit proposals that are consistent with the goals of the program. We will provide background on the program, discuss its scope and focus, outline the key features of the solicitation offer some practical considerations for submitting to the program, and finally give remarks about how this first-year funding opportunity relates to a longer-range national AI R&D strategy.

As mentioned prior to the start of the presentation, we will take questions via the email address listed at the bottom of each slide, and we will address as many of those questions as we can at the end.

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5. National Artificial Intelligence (AI) Research Institutes

We begin with the program at a glance.

This program is a joint effort between
- the National Science Foundation (NSF),
- U.S. Department of Agriculture (USDA) National Institute of Food and Agriculture (NIFA),
- U.S. Department of Homeland Security (DHS) Science & Technology Directorate (S&T),
- U.S. Department of Transportation (DOT) Federal Highway Administration (FHWA), and
- U.S. Department of Veterans Affairs (VA),

The overarching goal of the program is to
- Make long-term investments in AI research in areas with the potential for long-term payoffs in AI,
- To grow a workforce of future AI researchers and practitioners, and
- To create national nexus points for broader collaboration in this effort among universities, federal agencies, industries and nonprofits.

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6. National Artificial Intelligence (AI) Research Institutes

AI Research Institutes will have as their primary focus the advancement of multidisciplinary, multi-stakeholder research on larger-scale, longer-time-horizon challenges in AI research than are supported in typical research grants. They will accelerate the development of transformational technologies by grounding that research in critical application sectors that can serve as motivation for foundational research advances and provide opportunities for the effective fielding of AI-powered innovation.

In this first year we anticipate funding up to six full Institutes in the themes selected as priority areas for this year, and a number of Planning grants in an unrestricted range of foundational and use-inspired research that is within the scope of AI for this solicitation and appropriate to NSF and its partner organizations.

It is expected that there will be additional solicitations in this area in future years, and plans are already underway to envision a solicitation for the next year.

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7. Background

The rationale for this program is rooted in the national imperative to lead in AI research and development. Earlier this year, NSF joined other federal agency partners in announcing the release of the 2019 Update to the National Artificial Intelligence (AI) Research and Development (R&D) Strategic

Plan. The first strategic priority in this National AI R&D Strategy is to “Make long-term investments in AI research”

Following the 2019 update to this strategy, NSF led a convening of potential partners in May 2019 to specifically discuss that strategic objective, and to explore the need and potential for institute-scale activities as a response as well as the potential for a multi-agency effort to enact such a program.

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8. Institute Potential Discussed at “Convening”

At this convening, it was agreed that the

Breadth [and] scale of challenges [in AI research today] demand multi-disciplinary, multi-institutional collaborative efforts;
A Sustained investment is called for to achieve greater depth, focus, and time horizons than is typical in conventional programs;
That such activities offer a special opportunity to nurture the next generation of talent;
That more ambitious AI R&D agendas can facilitate accelerated transition of innovations into many economic sectors; and
Partners emphasized the complementary roles of both “foundational” AI research challenges and “use-inspired” opportunities to drive forward both the research and the societal benefit.

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9. Foundational and Use-Inspired AI Research

By focusing on the complementary roles of “foundational” and “use-inspired” research, the participants in this convening workshop identified national priorities in each and the value of leveraging both.

Research in “foundational AI” seeks to develop theory and methods that are independent of any particular domain of application. As examples, among the foundational issues identified in these discussion were the research needs in trustworthiness of AI, and foundations of machine learning.

Next, the term “Use-inspired AI research” refers to basic research that has use for society in mind. Use-inspired research seeks new methods and understanding in AI by situating the research in a domain of application to simultaneously inform progress in AI and solve particular use cases. The sectors for such use-inspired research are many, and may be aligned with any area of science and engineering, such as those shown here.

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10. Foundational and Use-Inspired AI Research

The goal in this program is that each institute incorporate substantial efforts in both foundational AI research and use-inspired research such that they form a virtuous cycle in which
- Foundational results provide a starting point for use-inspired research, and

- Results from use-inspired research are generalized and made foundational.

We use the phrase "use-inspired" rather than "applied" to emphasize that this solicitation seeks to support work that goes beyond merely applying known techniques, and adds new knowledge and understanding in both foundational AI and use-inspired domains.

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11. Scope of Program: Artificial Intelligence (1)

Turning to the solicitation, the overall purpose of the program is to “significantly advance research in AI and accelerate the development of transformational, AI-powered innovation by allowing researchers to focus on larger-scale, longer-term research.” So to understand the global scope of the program – that is, what it means to “significantly advance research in AI” – we provide the definition of artificial intelligence that informs the scope of the program.

In a broad sense, AI is concerned with understanding the mechanisms underlying thought and intelligent behavior and their implementation in machines. What we often refer to as “core” AI research are methods pertaining to the learning, abstraction, and inference considered essential for the implementation of intelligent behavior in machines. Core AI research also includes the study of architectures intended to directly manifest that behavior, including general architectures for intelligence, integrated intelligent agents, and multiagent systems.

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12. Scope of Program: Artificial Intelligence (2)

The modeling and implementation of intelligent behavior in machines began as, and has continued to be, a multidisciplinary endeavor.

Many computational models of intelligence have drawn inspiration from living systems, drawing from biologically-inspired computing, computational neuroscience, and behavioral and cognitive science.

Computer vision and human-language technologies have a high overlap with artificial intelligence, inasmuch as they provide methods for the perceptual and communications capabilities critical to intelligent systems.

Robotics is closely related to, but not identical to, AI. Robotics can provide the embodiment critical for intelligent systems to be able to act upon the world. While an embodied AI may be a robot, this solicitation’s focus is on the AI aspect of the research. For example, this solicitation does not include in its scope work development that is mainly focused on teleoperated robots or robots that repeat programmed instructions in controlled environments.

This definition of AI establishes the scope of research activities that are appropriate for any submission to the program.

13. Program Structure: Funding Tracks - PLANNING

This program provides finding opportunities in two tracks: Planning activities and full Institutes proposals. First we will look at the Planning Track.

The Planning track is for grants of up to two years duration and up to $500,000. The funding limit for such proposals is larger than that in some other NSF solicitations to allow PIs to engage in a larger range of sustained community building activities, as well as to provide the opportunity to fund exploratory collaborative research as needed to support the Institute vision.

Proposals to the Planning track are NOT limited to the themes identified in the Institute track. Planning grants may be proposed in those areas, and they may also be proposed in any areas of foundational and use-inspired research appropriate to this solicitation, NSF, and partner organizations.

Future solicitations may be expected to provide an opportunity for the submission of full institute proposals stemming from, but not limited to, these planning activities.

The deadline for proposals to the Planning Track is Jan 30, 2020.

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14. Program Structure: Funding Tracks - INSTITUTE

The Institute track will support cooperative agreements of between $16,000,000 and $20,000,000 for between four and five years (with budgets up to $4,000,000 per year). Institute proposals must convey clear and concrete plans for foundational AI research, use-inspired motivation and technology transition opportunities, the education and workforce development activities to be undertaken, and plans for multidisciplinary researchand community building appropriate to the proposed Institute's vision and mission.

In this first year of the program, Institute track proposals are being solicited in six high-priority areas. These areas will be detailed later in the presentation.

Future solicitations may target additional themes or even invite Institute proposals in areas not specifically called out, or offer open tracks. Future solicitations may continue the use of such themes (in these and other areas), invite unrestricted proposals for institutes, or both

The deadline for proposals to the Institute Track is Jan 28, 2020.

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15. Desiderata for All AI Research Institutes

We now turn our attention to the activities that constitute an AI Research Institute in this program. The vision for this program is broad and ambitious. It is expected that each AI Research Institute will pursue this vision in a unique way. In so doing, each Institute must address each of the five desiderata common

to all AI Research Institutes proposed to this program. We will address each one in greater detail in the following slides.

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16. Advance Foundational AI Research

The first function of Institutes, and critical to all proposals to this program, is that AI Research Institutes must advance foundational AI research. This means adding significant new knowledge and understanding to the disciplinary areas associated with the definition of AI presented earlier. In so doing, Institutes will demonstrate the potential to radically advance AI research beyond the state of the art. They might also address new foundational AI research priorities that arise from rapid advances in AI and the increasing ubiquity of AI-enabled technology.

The new directions charted by AI Research Institutes might indeed challenge disciplinary divisions that result from the current state of specialization, or promote the establishment of new science, engineering and educational communities that better reflect the long-term research needs for future AI.

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17. Leverage Use-Inspired Research

Second, AI Research Institutes will leverage use-inspired research. Earlier we presented a definition of thid and a vision for how foundational and use-inspired research are expected, in this program, to inform one another in a virtuous cycle towards transformational advances in each -- Thus accelerating the development and fielding of AI-powered innovation, AND meeting the challenges and complexity of critical domain problems.

The sectors for such use-inspired research are many, and may be aligned with any area of science and engineering, or societal good.

Some Institute themes for this year's solicitation are coming from a strong use-inspired starting point (for example, you will see one oriented on discovery in Physics). It is critical that each institute concept proposed for such themes convey how foundational AI will be advanced in service of the use-inspired vision.

Other themes are oriented on foundational research challenges (especially the themes in Trustworthy AI and the Foundations of Machine Learning). In such institutes it is critical that use-inspired research demonstrably advances the discovery and development of general results.

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18. Next Generation of Talent

Third, AI Research Institutes are expected to actively build the next generation of talent for a diverse, well-trained workforce.

Specifically, these Institutes should leverage the visionary nature of their research foci to drive new and

innovative education and development tailored toward the Nation's undergraduates, graduate students, and post-doctoral researchers, as well as through community colleges and skilled technical workforce training and other opportunities that advance knowledge and education of AI, including public understanding of AI.

This could include innovative pedagogy and instructional materials, advanced learning technologies, project-driven training, cross-disciplinary and collaborative research, industry partnerships, and new career pathways.

Institutes should offer broad, deep, and diverse experiences to build the next generation of the AI workforce, with a focus on broadening participation among the full range of groups traditionally under-represented in science and engineering. AI Research Institutes should maximize their unique position to grow the next generation of talent that will provide new discoveries and leadership.

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19. Multidisciplinary Groups

Fourth, AI Research Institutes are expected to be coherent multidisciplinary groups of scientists, engineers and educators appropriate for the proposed mission and vision. It is expected that they therefore be a network of multiple organizations under the leadership of a single lead organization.

Each Institute will have a lead PI with demonstrated vision, experience, and capacity to manage a complex, multi-faceted, and innovative enterprise that integrates research, education, broadening participation, and knowledge transfer. Each Institute will also be staffed with a Managing Director or Project Manager (potentially distinct from the lead PI) and a suitable Management Team to oversee the operations of the Institute.

It is important to emphasize – While an External Advisory Board is required, please do not contact, invite, or identify in your proposals any potential Advisory Board members. This step should be taken after the merit review and selection process is complete.

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20. Nexus Points for Collaborative Efforts

Finally, AI Research Institutes are expected to be nexus points for collaborative efforts. By “nexus point”, we refer to the role that an institute can play in bringing together people, ideas, problems, and technical approaches for maximum impact.

Institutes are expected to bring together the best teams and approaches from diverse organizations such as institutions of higher education, federal agencies, industry, and nonprofits/foundations. They promote organizational collaborations and linkages within and between campuses, schools, and the world beyond, broadening participation in research, education, and knowledge transfer activities through a network of partners and affiliates. NSF and its partners encourage institutes composed of a range of organizations. An important measure of success here is that those participating collaborative

efforts should be meaningfully integrated into a diverse Institute that is more than just the sum of the parts.

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21. FY 2020 Institute Themes

We now turn our attention to the six specific themes in which proposals are solicited for the Institute track. This year, Institute track proposals are being solicited in the six high-priority areas shown on the slide. They are themes representing a subset of research areas that NSF and partners support, and which were determined to be both an immediate priority for funding partners and for which the research community was judged to be ready to respond this year.

The question sometimes arises about whether it is allowable to submit an Institute proposal that intends to address multiple themes. The solicitation allows for this, and we will address this further later.

I will now invite my colleagues who are principle points of contact for each theme to describe each at a high level. Please consult the solicitation for full descriptions of each theme, and direct questions about the specifics of these themes to the POCs listed there.

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22. Trustworthy AI

I am Steven Whitmeyer, program director in the Division of Earth Sciences.

The Trustworthy AI theme is concerned with the development of AI technology that is not only powerful but also trustworthy. This theme is intentionally broad, encompassing a range of issues sometimes taken separately and sometimes in combination with one another to express the critical need that AI systems be trusted to be:
- Reliable, or sometimes thought of as verifiable – that is, they provide appropriate guarantees of behavior/performance, detect and thwart threats, and admit richer measures of reliability with methodologies for verifying robustness;
- Explainable, giving explanations that are appropriate to the domain, and are interpretable by human users, and/or sufficiently complete for troubleshooting erroneous behaviors or outputs;
- Privacy-preserving, respecting the expectations of privacy in both algorithms of AI and ML systems as well as the data they consume and produce; and
- Fair, including that they can be expected to avoid socially harmful biases that arise from system design, data bias, and their combination.

The solicitation presents these as “aspects of trustworthy AI” It is not necessary that an institute give each of these equal consideration, or even restrict its vision to these aspects or definitions of those aspects.

The solicitation also notes that these issues of trustworthiness pertain to a full range of AI methods, and not necessarily only the methods of data-driven machine learning.

Additionally, achieving trustworthy AI will require both technological advances and the development of policies for the governance of AI technologies. An Institute for Trustworthy AI should therefore include a component for the study of governance and ethics in addition to technology-driven research.

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23. Foundations of Machine Learning

Good afternoon. I'm Tracy Kimbrel, Program Director in the Division of Computing and Communication Foundations.

Theme 2 is "Foundations of Machine Learning." Machine learning, for purposes of this theme, refers to methods for solving tasks by generalizing from data. ML has made great advances in recent years through a combination of increases in computing power, the growing availability of data, and innovation in algorithms. While ML methods have yielded highly useful results over the past two decades, the field remains as much an art as a science.

Research at an Institute for Foundations of Machine Learning will seek general, rigorous principles for the theory of machine learning. An Institute might address questions of the sort shown here and in the solicitation, such as
- Theoretical study of established and new machine learning methods;
- A general theory of ML;
- Investigation of methods to combine symbolic and subsymbolic representations;
- Deeper evaluation of machine learning methods; and
- Discovery of general principles that govern deep learning architectures.

The solicitation does not limit the range of potential investigations here, as long as the institute in this theme has as its primary focus the goal to deepen the theoretical foundations for the science of machine learning. Therefore it is important to emphasize that applications of ML should not be the central aim of the Institute responding to this theme. As is appropriate throughout the program, use-inspired research is expected to contribute to the related goal of foundational advances. However in this theme, the study of use cases should demonstrably advance the discovery and development of general results.

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24. AI-Driven Innovation in Agriculture and the Food System

I am Charlotte Baer, National Program Leader in USDA NIFA.

AI-Driven Innovation in Agriculture and the Food System is a theme that is sponsored entirely by USDA-NIFA. Proposals submitted to this theme will designate NIFA as the intended funding agency.

Agricultural production is a use-inspired enterprise. AI applied strategically throughout agriculture and food production systems may provide a revolution in food and feed production.

There are critical challenges associated with the adoption of AI in agriculture. The success of AI for this purpose will depend on
- engaging and connecting stakeholders,
- social engagement on the processes and products of AI, and
- overcoming challenges in methods, data, privacy, and fairness.

AI Research Institutes that simultaneously advance foundational AI research and agriculture and food systems might address a wide range of research foci, build new multidisciplinary communities, and create the workforce needed for an AI-powered revolution in agriculture. Examples of such activities are included in the solicitation. That range of activities is presented only as illustrative of the potential scope of an Institute in this area; it is not to be taken as either prescriptive or limiting.

AI innovations are likely to be transferable to, or informative for, other agricultural application areas and to other themes across this overall initiative. NIFA encourages cross collaboration and sharing of information, where possible and through various forums, to further enhance expanding opportunities with AI. Efforts resulting from the theme will ideally support the research, education, extension, and economics endeavors designed to advance public knowledge and responsible commercial interests.

Questions specific to this theme should be directed to the National Program Director at NIFA, listed in the solicitation.

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25. AI-Augmented Learning

I am Amy Baylor, Program Director in the Division of Research on Learning in Formal and Informal Settings.

The primary focus of an institute in the theme of AI-Augmented Learning includes research and development of AI-driven innovations to radically improve human learning and education writ large.

This could include learning in formal settings, training, and on the job, as well as informal settings.

An institute in AI-augmented learning could focus on the support of cognitive, neural, perceptive and affective processes as well as well-defined learning outcomes in STEM fields, and STEM-enabling content such as literacy, self-regulation, creativity, curiosity, communication, collaboration and social skills.

For example, AI to augment or support learning could include intelligent support for personalized and adaptive learning with a focus on learner agency, engagement, and interest-driven exploration. This could include, for example, research on the design of conversational agents, intelligent cognitive assistants, supportive multimodal dashboards, or social robots. AI-augmented learning should include careful attention to the role of human teachers/educators, mentors and collaborators.

An institute in this theme could also address the grand challenge of "Education for All" through research

of AI-supported learning systems to radically expand access of learning to all Americans and in response to the rapidly changing landscape of jobs and work.

Proposals should also include systematic plans to address algorithmic bias, provide model transparency and support data privacy and security in the support of learning.

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26. AI for Accelerating Molecular Synthesis and Manufacturing

I am Laura Anderson, Program Director in the Division of Chemistry.

The primary focus for an institute in the theme, AI for Accelerating Molecular Synthesis and Manufacturing, is the development of AI advances and AI-based tools to drive molecular discovery and identify chemical transformations that support energy-efficient, sustainable chemical manufacturing. Activities in this institute will impact new molecule discovery as well as the development of alternatives to existing chemical processes. End-use products include: small molecules, commodity chemicals, pharmaceuticals, specialty chemicals, biochemicals, macromolecules, and nanomaterials; impacted technologies include: advanced manufacturing and sustainable processes.

Institutes in this theme will focus on research leading to the development of AI tools and approaches that increase the pace of discovery of new molecules and promote alternative, energy-sustainable processes for chemical manufacturing. These activities may include:

- The development of methods to extract useful information from sources with sparse and noisy data including figures, spectra, tables, and text for use by AI systems.
- The execution of autonomous experimental and computational measurements to facilitate synthetic AI tool development.
- The use of automated synthesizers to verify AI tools, improve synthetic reproducibility and repeatability, and design safer and more sustainable methods of chemical manufacturing.

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27. AI for Discovery in Physics

I am Saul Gonzalez, Program Director and Acting Deputy Division Director in the Division of Physics.

An AI Institute in Physics will incorporate novel techniques to accelerate discovery and extend the frontier in AI by addressing domain-specific challenges in Physics. Realizing the full potential of AI for Discovery in Physics will improve the operations and exploitation of Division of Physics facilities, promote the integration and interpretation of heterogenous datasets, accelerate model-building and quantification of uncertainties, and enable novel ways to interrogate high-dimensional features of complex data sets.

An institute in this theme might focus on one or more of the following examples. This list is neither prescriptive nor limiting.
- improving and optimizing operations, real-time event selection, classification, feature extraction, reconstruction, and analysis at dataflow-intensive facilities;
- accelerating multi-scale, multi-physics simulations for multi-messenger astrophysics, quantum

chromodynamics, cosmology, and plasma physics;
- exploring the very large space of potentially viable string theories ("string landscape");
- developing and validating predictive dynamical models of complex, far-from-equilibrium systems;
- improving the understanding of the physics principles behind genome packing and the resulting genome architecture and dynamics; or
- co-developing improved physical models of brain function and new AI architectures.

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28. Education, Workforce and Broadening Participation

Thank you, Colleagues. Now that we have finished looking at the individual themes relevant to the Institute track, we would like to conclude with some observations that again pertain to the entire program. We begin by pointing out that the AI Research Institutes program is dedicated to robust activities in education, workforce development, and broadening participation. This is evident in the "desiderata" for Institutes, with special emphasis in the institute's role in actively building the next generation of talent.

Where planning proposals are concerned, all planning activities and institutes are expected to propose meaningful plans in these activities, and submission requirements make clear where this should be addressed, especially in the section, "Education and Workforce Development", where proposals will present plans toward actively building the next generation of talent for a diverse well-trained workforce through new and innovative approaches to education and workforce development.

Full Institute proposals have the same required section in which more concrete programs will be proposed for education and workforce development. In addition, full Institute proposals will also include a designated section for Broadening Participation Plans, in which proposals will describe broadening participation objectives and strategies for achieving them, increasing diversity through the participation of underrepresented groups, including women, minorities, and persons with disabilities.

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29. Notes on Submission and Eligibility

As we near the end, we would like to emphasize some of the important submission and eligibility requirements in the solicitation.

All proposals to this program track are to be single-organization proposals. That is to say, collaborators from multiple organizations will submit a single proposal from a lead organization. Collaborative proposals from multiple organizations will not be accepted. For more information on these procedures, please see Chapter II - Proposal Preparation Instructions in the NSF Proposal and Award Policies & Procedures Guide, or PAPPG.

Two types of organization may apply in this role as lead organization, as shown. Other organization types MAY be included as subawardees on proposals.
Further clarification on these types of organization can be found in the PAPPG.

Where submission limits are concerned, there are no limits on number of submission per institution. There are, however, limits on the number of proposals for senior personnel. An individual may be on at most TWO proposals of any kind as senior personnel. In addition, an individual may be on at most ONE Institute Track Proposal.

When applying these criteria and considering your potential participation in proposals to this program, it is important to understand that the term “senior personnel” is inclusive of the roles of PI and co-PI. Be careful to be listed on at most two projects. In the event that an individual exceeds these limits, compliant proposals will be accepted based on earliest date and time of proposal submission. That is, the first two compliant proposals will be accepted, and the remainder will be returned without review.

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30. Other Frequently-Asked Questions (Can I submit an Institute proposal that responds to multiple themes?)

And as we near the question and answer period, we want to address a few frequently-asked questions that are among the most commonly asked, and which will appear in a soon-to-be-released FAQ document.

First, “Can I submit an Institute proposal that responds to multiple themes? And Is it a good idea?”

We can answer the first. The solicitation allows for this.

As for whether this is a good idea, this is a matter of the quality of proposal, which will be determined in merit review. As such, it is advisable that relevance to any more than one theme be identified only in cases where significant activity is planned in the five desiderata for Institutes for those additional themes.

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31. Other Frequently-Asked Questions (Is it required that an Institute be multi-organizational?)

Next, “Is it required that an Institute be multi-organizational? How important is this? And How many organizations should comprise an AI Research Institute?”

This program requires that “Institutes will consist of a network of multiple organizations.” The program encourages multi-organizational arrangements comprising a "complex, multi-faceted, and innovative enterprise that integrates research, education, broadening participation, and knowledge transfer;" and which engage diverse institutions. Furthermore, the program requires that Institutes create nexus points that "[bring] together the best teams and approaches from institutions of higher education, federal agencies, industry, and nonprofits/foundations." How a particular proposed Institute envisions this will be unique to that Institute. To assess the potential competitiveness of a proposal, note that the solicitation-specific review criteria refer to all five of the desiderata for Institutes provided in the program description.

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32. Other Frequently-Asked Questions (Can an existing institute or center participate in a proposal to this program?)

Next, "Can an existing Institute or center participate in a proposal to this program?"

There is no restriction regarding how an existing institute or center may participate in a proposal to this program. Any AI Research Institute funded in this program is expected to build significant new capacity in the five desiderata outlined in this program. This includes proposals that build upon or collaborate with existing organizations, including existing Institutes or centers. Proposers are reminded that as a network of multiple organizations that together serve as nexus points for collaborative efforts, proposed Institutes must be meaningfully integrated in such a way that it creates a capability that is more than just the sum of the parts.

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33. Out-year Opportunities/Plans

We want to conclude with a word about the future vision for the program.

This program solicitation is the first step in what is expected to be a longer-range, multi-agency investment in AI research and education. Future solicitations may continue the use of identified themes corresponding to high-priority areas, invite unrestricted proposals for institutes, or both. NSF and partners strive to be responsive to the research priorities emerging from the community and will also evaluate future research priorities on the basis of the quality of proposals, progress in funded projects, and emerging national research priorities. If used, future themes may be solicited in areas corresponding to planning activities funded in this year but will not necessarily include or be limited to these areas.

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34. Questions

On behalf of the National Science Foundation and partner agencies, we would like to thank all of you for your time and would also like to thank you for your interest in programs at NSF.

This presentation will be made available in the coming days on the National AI Research Institutes program website. If you have any questions pertaining to the program, we encourage you to consult the program's Frequently-Asked Questions list, which will be available on the program website in coming days. If you have questions of us now, please send them to the program mailbox shown here.
Once again, we thank you all for your participation.