Welcome and thank you for standing by at this time all participants are in a listen only mode. During the Q&A session, please press star one on your touch tone phone. Today's call is being recorded. If you have any objections, you may disconnect at this time. I would now like to turn the meeting over to Karen Geary. You may begin.

Good afternoon. My name is Howard Wactlar and I am director of the division of information and intelligence systems here at NSF. I want to start by welcoming you all to the NSF smart health and well-being solicitation webinar of course want to wish a happy new year.

This is the second year of our ongoing smart health program and I am pleased to say that is both expanded in scope and refined in definition. We face many challenges as a society in healthcare from effective care that efficient cost to the needs of early detection and prevention. The goal is not just dealing with the implications of disease in impairment, but also with prevention and also improving the overall quality of life of those both in need of care and those providing it.

The discussion today is intended to help you prepare and submit your best approaches to these goals to the advancement of computer science, engineering and social behavioral and economic sciences. Through the discussion today program directions representing each of the participating directorates. Misha Pavel, Smart Health Program director is from Computer & Information Science and Engineering Directorate. Fahmida Chowdhury is a program director from the Social Behavioral and Economic Sciences Directorate and Russell Barton a program director from the Engineering Directorate.. We will start with an overview of solicitation 12-512 and then continue to respond to questions that you submit via email or via Chat. So thank you all for joining us and best of luck with your proposals. Misha…

Thank you for your introduction. My first slide is actually introducing the members of the team that are present. You have heard from Howard, the people that are present here are Russ Barton,Fahmida Chowdhury, Vasant Honavar and two AAAS fellows Will Barkis and Julia Skapik who were fundamental contributors to this program.. The first thing I would like to do is give you of an overview. Motivation for the smart health and well-being program and then describe the areas of research, challenges for the program and finally the specifics of application. We will then open the webinar for questions.

Everyone agrees that healthcare is currently is one of the key national and global challenges. We spent large amount of money on healthcare. About $1000 per person. That's about 16 percent of gross domestic product. [ Indiscernible - low volume ]. Other indicators of the deficiencies of the current system include estimates of medical errors that are responsible for probably more than 100,000 deaths a year. This situation will get much worse as the population is aging resulting in an increasing number of people requiring care.

 The epidemiology data that suggested that the can portion of the cost is due to preventable condition. Lifestyle and health related behavior of individuals. These and many are similar considerations of the means for change in the way we deliver health care.

Recently the need to change the healthcare system has been recognized by a number of analysts and organizations. Two of the most prominent examples of these are reports released by the president's Council of advisors on science and technology. In 2010. The first report on the potential of information technology is focused on networking and information technology to improve health care. The sector report to the president is the congressional mandated review of federal networking and information technology research and development. This report -- designing the digital future that includes healthcare is a prominent area for research and development. In addition to PCAST reports, the earth a number of other reports. It is becoming increasingly clear that the application of technology is thought by many to be a key component of any district -- strategies for addressing out here issues. In summary, these reports make two important points. First, they've decided the need for destructive healthcare in delivery and second they suggest that reason and advances in science and technology can help us realize this change. Next slide.

>> This contains some of the changes that needs to be made and healthcare. Currently healthcare getting case when a person gets sick. It is reactive, episodic and it focuses on disease. The new healthcare will have to be proactive, preventive and focused on the life quality and well-being. Current health care is hospital and doctor centered. It needs to be replaced by the a patient centric approach as much care as possible provided at home. Possibly [ Indiscernible - low volume ] or other technology. With the possibility of including the family and community as a significant contributor to individual health and well-being. The current approach to diagnosis and treatment is based on training and experience of the clinicians. This has to be changed to provide evidence-based approach using every possible piece of evidence that we can summon including electronic realm out records and so on.

>> These changes need to be implemented require the involvement of patients. Patients need to be able to participate actively in their own care. The empowerment of patience is the key component of future health care. Change is difficult. For example, changing our food habits will be especially difficult because fast food is available and tasty. Food, transportation and communication technology and able to access to fast food am permit us to be less active. Could we possibly use technology to change these unhealthy behaviors? We hope so.

>> And summary for the motivation section, information and communication technologies are poised to support healthcare transformation by preventing the onset of diseases, improving diagnosis and treatments, and handling the quality of healthcare delivery, and empowering us to participate in our own healthcare and well-being.

>> Let's look at the sample of advances, technical advance is better able to make it possible. Networking and technology, immediate access to huge amounts of data with the -- mobile and wearable computing. In conjunction with social network will change our ability to collect data and affect our ability to change behavior. [ Indiscernible - low volume ] cyber physical systems and robotics -- the control of privacy and security are among the key enablers of healthcare transformation. Unobtrusive monitoring may revolutionize our ability for physical and psychological and behavioral phenotype you. Statistical pattern recognition and machine learning [ Indiscernible - low volume ] to the underlying phenomena. Here is a slide that illustrates a small set of examples of technology based on advances in mobile technology. The applications range from basic committee that includes environmental, behavioral and physiological sensing to social computing and -- these technological advances and new -- open a number of opportunities and give rise to new fundamental problems that need to be solved in order to derive maximum benefit.

>> And to slide, we illustrate the framework of architecture for different components that contribute to the individual centered care with a focus on technology implementing [ Indiscernible - low volume ] on the right, it's a multi-moral data election system treating a variety of applications [ Indiscernible - low volume ]

>> The components on the bottom represent the infrastructure of the components on the left represent the various forms of intervention and cares. These include the members of care teams but also the patient himself and his robotic devices.

>> On the top, there are number of components that they need -- economic political and regional factors at play important key role in transportation of healthcare that has to be incorporated into the process.

>> The need for solving fundamental scientific questions and making new discoveries that will enable the transfer to -- to information of healthcare is motivation for smart health and well-being program. The goals of the program include bridging the gaps that exist in science and technology in support of health and wellness. Leveraging fundamental science research supported by NSF. And thissolicitationn, NSF is looking for highly innovative, high risk, high pay proposals considered transformation of healthcare and focus on prevention and well-being.

>> The fundamental research issues appear to naturally prosper into four broad areas. I would like to emphasize that these areas are not mutually exclusive and do not represent a unique classification. Rather, this classification should be used as a guide in selecting fundamental questions to be addressed by this smart health and well-being research.

>> Digital health information infrastructure is associated with continued accrual and integration of EHR, Parma and clinical research data and distributed that federated system. The ultimate goal of this research is to bring data such as EHR to where it is needed when it is needed. The second area, data to knowledge to decision comprises research concerned with making the best possible use of the data. In support of evidence-based healthcare. The third area is focused on how technology can empower patients to participate in their own healthcare that could lead to better and more affordable care.

>> Centers, devices and robotics represent technologies for sensing and intervention that enable us to close the loop using intelligent technologies. I'm going to spend a little bit more time on each of these four areas.

>> The role of the digital health information infrastructure is to assure the lifelong health information can follow an individual everywhere and be available at any time. Making that possible require significant research. Research is required to develop decentralized -- an effective sharing of diverse health records, clinical data, results of biomedical research and longitude of bull population studies. The key concerns here regarding knowledge to presentation is the [ Indiscernible - low volume ] of databases. Electronic health records among the different providers and variety of data sources, the diverse terminology, definition and [ Indiscernible - low volume ]. We use the term data prominence, [ Indiscernible - low volume ] their movement between databases. Specific old research questions include but are not limited to how to harmonize data from different sources and providers. How to implement a universal exchange language as suggested by the report. To aid in translation, provide metatagging and represent data prominence. Applications of engineering -- optimization techniques to improve information flow, efficiency of healthcare system. Finally, this research include investigation of new models of privacy and security.

>> The role of the area related to data to knowledge to decision. Is to develop methodology that would bring all available data together on each diagnostic and treatment decision. For individual patients. This is in contrast to the current Patrick. Clinical decisions are based on training of individual clinician. Specific research areas include multimodal -- [ Indiscernible - low volume ] the list to say, they shoot -- demand is amount of data that we will be facing will require new come computational approaches and am now a good algorithms. Models that would in enable often in -- and data mining in conjunction with optimal decision fusion -- data fusion. Investigation of decision would support Ogg rhythms and clinician based on big data is another huge issue.

>> These out of rhythms must be able to fuse hydrogen that distribute data with [ Indiscernible - low volume ] multiple levels ranging from systems biology to organs and including even being a girl and social data. Table analects -- [ Indiscernible - low volume ]

>> To discover hidden relationships among health related aspects including risk or is, drug efficacy individual diagnosis -- prognosis -- [ Indiscernible - low volume ]

>> This research area sensor, devices and robotics is focused on the interaction between information and the physical world. Research topics include sensors, sensor networks associate protocol that would support continuous monitoring. [ Indiscernible - heavy accent ]. Activate range from simple devices such as contacts, alert systems to complex intelligent automatic systems and robotics. The purpose of these actuators is to assist, rehabilitate, enhance and replace human capabilities.

>> NSF expected this area will be [ Indiscernible - heavy accent ]

>> This research area is focused on developing the most effective ways to help patients and individuals to participate in their own care including share decision-making, consistent with their individual values. This area also includes research on how to help people change their lifestyle and behaviors to prevent diseases and to maximize well-being. Research topics include interfaces to information to educate patients and in formal caregivers. [ Indiscernible - heavy accent ] interfaces that enable patients to participate in their personal care and influence decision-making process based on their values and priorities. Maximize patient information, self at diversity is a key point. For example, by coaching and computer games.

>> Social networks to share information, support the community of caregivers and help to maintain high levels of socialization. Techniques for just in time intervention. The most effective in research and changing behaviors. Utilization of existing and development of new perhaps more quantitative models of behavioral change.

>> Here is an example of using technology in support of healthcare errand I'm shift. This light shows a possible role of mobile health technology in care and maintenance of well-being. A young and old was chosen to illustrate the use of the technology to support actively living, exercising and performance improvement. Mobile technology is used here for both collection of observations and measurements as well as a conduit to deliver performance feedback and coaching.

>> In order to get a complete health data for particular individual, especially elders, and those with chronic diseases, it would be necessary to integrate mobile sensing, with static data collection and intervention at home. This light is a diagram I borrowed from Oregon Center for aging and technology illustrating medication adherence, sleep and interaction with computers. We can get e-mail, we can get computer games, you can get typing speed. Computers are also used in addition to the mobile telephones to deliver coaching.

>> The combination of mobile home monitoring, genetic data, held related imaging and so I will create a data. To use these data, to optimize care, preventive intervention was an individual decisions we need to develop models that will be multiscale, computational and predictive. The modeling process will enable optimization of information fusion, the development of behavioral prototyping an establishment of behavioral markers. That will be used for assessment, prediction and ultimately for coaching, maintenance and rehabilitation.

>> During the presentation I referred several times to computational models. The importance of computational models cannot be overstated as they provide a number of key benefits. First, reducing the degrees of freedom enable significant gains of statistical efficiency. This can reduce the very ability any estimation processes without requiring long -- large sample sizes. One of the most important features is the ability to make predictions for specific individual patients as opposed to making inferences about average patients. As such, computational models can be used to optimize intervention for individual patients in specific contexts. Finally, the process of building and evaluating quantitative models, frequently generates new fundamental questions by making unexpected predictions.

>> During the remaining of this presentation, I will discuss briefly specifications associated with the smart health and well-being proposal preparation and submission. In contrast to the first year of this broke ram, the current solicitation is cross cutting across directors including science, engineering and social, behavioral and economic sciences. The logistics of this change was to in Hainan -- enhance the multidisciplinary research efforts to match the multidisciplinary nature of the problems.

>> I would like to emphasizethat NSF is looking for innovative, high risk, high payoff proposals whose results will generalize across diseases and improve quality of life .

>> This light, we included to illustrate the results of the smart health and well-being effort during the first year. NSF received 200 proposals of individual projects, about 280 proposals altogether including the collaborative ones. The program was able to find 10 percent of the small, 70 percent of medium and eight percent of large ones. We will not be surprised if the solicitation will be larger this year because the larger submissions because we included three directorates.

>> This year, the program plans to support two types of projects. Type I is exploratory ranging from $200,000-$600,000 of total budget with duration of 2 to 3 years. The second type is type to which is integrative projects that range from 600,000 type to which is integrative projects that range from $600,000 to about $2 million with a total budget and duration from 4 to 5 years.

>> In response to the previous smart health and well-being solicited you, most proposals to close to the limits of the categories. This year, the ranges for each type of proposal are larger. But the reviewer's will be asked to access the appropriateness of the budget to propose work.

>> Proposals should focus on transformational advances in healthcare delivery and improvements in well-being. They must include advancement in one or more fundamental scientific area as indicated on the slide. Engineering, computer science, social, behavioral and economic science.

>> Proposals must include, most target important healthcare problems. I included this slide because last year we have seen a number of proposals that could be described as follows. A researcher envelops a hammer and then start looking for nails. This approach is not consistent with the spirit of the smart health and well-being proposal program. Instead, we hope to receive proposals focused on one or more key healthcare and well-being of problems and then find creative ways these fundamental scientific advances to solve it. The smart health and well-being of Roe Graham will not fund a valuation of existing technology and clinical trials.

>> This slide shows the two ways you can apply. You can find all of this on the solicitation so I'm not going to waste time. I will thank you for your attention and we will now open the webinar for questions.

>> Thank you. Will now begin the question and answer session. If you would like to ask a question, please press star one. Please I need your phone and record your name earlier when prompted. Your name is required to introduce your question. If you need to withdraw your request, press star two. It will be one moment for the first question.

>> Before we get the next question, maybe I can answer a couple of questions that we have received by e-mail prior to the webinar.

>> One question was a question about private industry. Will private industry be allowed to submit the postal?Generally, NSF funds universities and nonprofit organizations. However, industry, private industry can apply as a sub to an industry or nonprofit organization.

>> Any questions so far question mark

>> We do have a question from the phone line.

>> Okay.

>> Cynthia, your line is open.

>> Hello. How are you?

>> Okay.

>> I am doing fine. This is a little bit exciting for me. I graduated from Empire State College into disciplinary studies

>> The interplay dust into disciplinary studies which was --

>> [ Indiscernible - low volume ]

>> Can you hear me question mark

>> I am sorry.

>> I graduated from Empire State College and 2010 with a 2002 with a bachelor of science in into the scenario studies in science as which include nutrition know -- nutrition and technology. I've been doing a lot of research to new turn -- nutrient density in the past year and a half. My question is can I get a copy of this slide show? I have an idea for the returning veterans and the veterans that exist today. About how to better their lives because what I see out in the world is depletion of the soil and there is no nutrient density to our food that is why we are getting the gene markers and the alleles in all of our people today.

>> Let me jump -- first of all thank you for reminding me, on the slide, you will see a website and I am reading it now we're their presentation and the whole record will be available in a couple of days. You will have available this information. As to your second part of your question, absolutely I can repeat that the focus has to be on important well-being and health care question. This seems to fit in general your description. However, the proposal needs to address a fundamental advances and one of the scientific and -- disciplines covered by the solicitation. That into Terri, computer science or social and behavioral and economic sciences. In

>> My battery is very a low on my phone. I apologize. I probably have 1 million other questions. What I will do is I will contact you via e-mail.

>> That is okay. You can address our e-mail to the team and we will get you a response.

>> Thank you and God bless you. This is absolutely thrilling to me my mother, both of

>> Thank you for your interest. We need to move on.

>> Thank you.

>> With a question from Sharon Smith.

>> Hello. This is Sharon Smith with [ Indiscernible - low volume ] I have a question. Generally in the past in the proposals that many have been funded, are there any particular target audience such as any particular children, elderly or any characteristics of the target audience that you can give us to give an idea of we should be focusing on?

>> If anyone else wants to respond --

>> In general, we are focused on well-being and quality of life. That concludes life span so we did not on purpose specified any particular group of individuals.

>> This does not preclude. For example, work that would focus on aging or infants or any of that would be fine. People with chronic diseases have been used as an example. But generally, the way we see this is that there is a problem, that is addressed and then a disease or condition can be used an example. We like to see solutions that are generalizable to us.

>> Thank you.

>> Our next question comes from Andrea Dietrich.

>> I am with Virginia Tech and I have a question we are a group that are seeking to do research and empowering individuals to invest in their own well-being. My question is for the larger project, two out of three directorates are required. Our group focuses on the social, behavioral and economic go sciences and engineering. Does this solicitation require involvement of someone from computer and information science and engineering which seems to be the lead institution for the solicitation?

>> No.

>> That is a simple answer.

>> Two out of three.

>> It could beat any two out of three.

>> At that concludes your question --

>> That was the question.

>> We have another question.

>> Thank you. My question isdoes NSF focus on work done on international? Or is it only for domestic work?

>> Again, if anybody else wants to reply to this but NSF funds American institutions. At the same time, we encourage the collaboration with foreign institutions but the way it is doneis the NSF is funding the American partners and money has to be raised for example in Europe from unit Iasi European Union or other organizations to fund the harder in a foreign country.

>> We do have provision where the office of international science and engineering is able to fund travel of American individuals to foreign countries if it can be justified.

>> Thank you.

>> Did that answer your question?

>> Our next question comes from [ Indiscernible - low volume ]

>> Hello. I am from Indiana University. Thanks for giving me the opportunity to ask this question. My interest is

>> You are fading out.

>> My area of interest is data to knowledge to do decision-making. I'm wondering what with the solicitation, I was told you can develop models but trying it out in a clinical scenariois something that NSF isnott probably looking to fund. Is that how I read this solicitation or I can give you more details of the project that --

>> What is the area?

>> Data to knowledge to decision.

>> Reason to uncertainty, basically trying to figure out what is an hour old, in well care, what is next required to be assessed of these children and well care situations.

>> The answer to this is the area is appropriate that there has to be a fundamental advancement and one of the three areas, engineering, social, behavioral, economic sciences or computer science. In addition to the clinical application. In order to solve your clinical problem and decision-making, you need to advance [ Indiscernible - low volume ] fusion techniques or whatever data processing techniques that would actually represent knowledge, -- conservation to knowledge a one of these areas, then it would be appropriate.

>> I think it needs all three. The question is, if we apply for it, I was told the funding would not apply it towards trying to evaluate in the medical -- is that still the case?

>> We do not fund does the evaluation of existing out the rhythms or technology.

>> That was my question, thank you.

>> You're welcome.

>>

>> The next question comes from Omar.

>> Actually, is somewhat related to the earlier question. In essence, is this opportunity receptive to it systems report for the aim is to integrate existing technology that in the innovative ways to solve a particular problem as opposed to developing a new technology for example data mining ogre them applied to healthcare?

>> My immediate response is that the integration could be irrelevant. It could be a huge contribution to science but it has to be more than just putting existing things together and seeing if it works.

>> Okay, thank you.

>> You guys are welcome to join.

>> Our next question comes from --

>> We are currently considering to submit a grant, we are to have a team working on a separate proposal so the question I have is we need to include our [ Indiscernible - low volume ] as an PIR we can leverage another project without including the PI

>> I am not sure I understand the issue here. We specifically, the solicited the the PI PI Oracle cannot submit to proposals. I'm not sure what was the question.

>> The question is if the doctor is already working with us on related project --

>> That is no problem.

>> This project, if we don't have the doctor, will that be a weakness or is that fine.

>> That is fine. The way I see it,

>> [ Indiscernible - low volume ]

>> [ Indiscernible - multiple speakers ]

>> You have to convince the reviewer's

>> Thank you.

>> The next question comes from Chris.

>> I'm guessing that is my name. I am from Purdue University. The question is how directly tied it does this need to be to a particular critical or healthcare application? Our scientific advances that play into a variety of things, for example in data management, data analysis appropriate or does it really need to be tied into a particular demonstration that this has -- show that this is going to have clinical impact.

>> You need to have some evidence that but the embankment in science is going to have a clinical impact. It is very important to have that part of the project included because otherwise almost anything would potentially be all right.

>> Does there need to be some sort of clinical evaluation?

>> No. It has have a clinical component -- clinical relevance. It has to be demonstrated.

>> Okay. Thank you.

>> Our next question comes from I then -- I've been -- IVAN

>> Could you please clarify the difference between integrative an exploratory proposal. These sounds like integrative will require more mature projects that already have significant results. What exactly is the difference between these two categories?

>> The exploratory projects are smaller and we expect that they would address problems at earlier stages. The integrative projects represent more effort. In some situations, that means that you may have more evidence about war prior data or whatever. It does not -- it is not required. Sometimes you may think of a problem that is very difficult and requires that kind of effort and yet you may not have much prior data. That is why the solicitation was written in such a way that the data, prior data was not specified is a requirement.

>> Differences in sign -- size and scope rather than how much were.

>> The difference is is in scope.

>> Our next question comes from Donnie.

>> I am from the University of Memphis. My question is from how much details do we need to get into the healthcare aspect in our proposal. For example, we say that these are the healthcare problems will be benefited using our out the rhythms, will that be enough or do we need to a point out some very specific healthcare applications and show how our ogre them will be implemented for benefiting those applications.

>> You have to it demonstrate the rhythms

>> It cannot be just says this can be used here or there. Eventually it will be used for curing cancer. That would not do. It has to be real problem, where the real problem as a barrier and gap that has been solved by this advancement in science and technology.

>> Do we need to get in the proposal adds NIH like details about how the ogre of them will be evaluating the payment -- patient

>> You have to convince the reviewer is that the problem is real and you have -- perhaps risky bet you have innovative approach

>> Next question from Mason.

>> Hi. I am from Georgia Tech. The relationship to the clinical aspects and the relevance of the problem to clinical work that was mentioned a few times, I was wondering if a specific clinical evaluation could be a component of the proposed research question Mark

>> Sometimes it's important to have a component that addresses the evaluation issue. The in this is that we have expressed in the solicitation and in my presentation was that the evaluation by itself is not enough. There has to be advancement of science. And then, some projects may need serious evaluation but it has to be a valuation of the fundamental advancement impact on the clinical problem.

>>

>> Inclusion -- clinical invite wish and component following the development of the new technology is not the problem.

>> No. It indicates that you are looking at the real problem.

>> Evaluation of us around the mice controlled trials is very expensive and typically for focuses on existing development of solutions. That is not what we are finding. Evaluation of innovative approaches well double up in a dancing science then that would be appropriate.

>> Clinical validations.

>> Thank you.

>> The next question comes from Pietro.

>> I am from Vanderbilt University. Can you please expand a little bit on the be back can you please speak louder

>> I would like to ask some clarification about [ Indiscernible - low volume ] I understand what rehabilitation robots but what is if you can give more details about some examples of this tragical assist robots.

>> I would like to avoid specific examples that the idea here is the program is focused on well being and health of individuals. Sometimes issues that have to do with surgical procedures may affect it. Laparoscopic surgery, robotic surgery may make it possible for somebody to have surgery in a rural environment. So, it would be possible to have advances in robotics that would be applied to that although it would probably be a little stretch here.

>> Okay, thank you.

>> Hold on one second. Howard just reminded me that proposal like that may be more a popery it for the national robotics an initiative that was announced earlier -- last year.

>> Okay, thank you.

>> Our next question comes from war and Sugarman.

>> Hello. I am for brunch -- at Rochester Institute of technology. I have listened long enough that I think you have answered my question but I want to focus it in case it helps. This is the question on methodology in the proposal. I'm comfortable that we are developing innovative advances in social behavioral, computer science by developing by working towards developing a physiological control videogames that focuses on health and well-being in innovative ways that promote psychophysiological self-regulation. Their critical methodology in the proposal is in testing, game testing and we testing and refining with a variety of different populations. Some of whom will have a specific disorder, some are healthcare providers, some art or technology folks. That evaluation these -- these -- piece is okay. Our out women -- algorithm, information that comes out of it, the test is having these people do this and analyzing their responses to questionnaires, interviews etc.

>> Of course, yes. You have that right. The important thing is that there be a fundamental advancement compared to where the field is now. There's a lot of efforts and a variety of seriousness with games and physiological him measurements. The important thing is to have that advance and then testing it is important to.

>> I think we are there. Thank you.

>> I'm looking forward to seeing it.

>> Our next question comes from --

>> Hello. I am from for now. My question was related to the previous one. It is clear that you are not looking for a clinical trial and advancement fundamental scientific advancement. What is unclear to me is what type of evaluation are you looking for in this proposal to attract -- the resulting results will be addressing the core problem. Is the evaluation combined, that outdoor the mid-advances combined with applied to the population or the group. So you are explicitly seen some of the evaluation with individuals, would that health problem or health area, I just wanted to have a little bit more -- how you are differentiate between the clinical trial and evaluation to address the -- while advancing or addressing a health problem in a core health problem.

>> The simple answer is very specific to your field. You have to be able to convince -- if you come up with a new advance out where them or a post -- approach or technology, you have to be able to convince yourself that it works. You need to have enough in your proposal to figure out how to test it and had to figure out that the advancement is actually made. We are trying to shy away from is a broad randomized controlled trials which try to sample huge number of populations and evaluate a drug or interventions on population level. That is not necessary.

>> I guess the first part of your answer was clear but a broad randomized trial is not necessary but some of the did this in the domain that we are addressing is necessary, right question our

>> Yes. For example, if you have a technique for measuring style of conversations or something of that sort, you might want to convince the reviewer is that you're going to figure out how you wish your yourself that the measurements that you think you are making and the empresses that you are making with your algorithms are going to be actually correct inferences.

>> Thank you.

>> Our next question comes from --

>> It from University of Wisconsin. By using this presentation that, some slides of this program focus on the preventable care and the home-based care. We have a project that focuses on the efficiency of XML. Will that project fit in the scope of the program?

>> I'm not sure I got your question?

>> The this is Russell. The safety and efficiency of inpatient care does that also because what we are talking about enabling individuals who are also enabling the healthcare delivery individual. That would fit.

>> Okay, thank you.

>> We have time for one more question and that we have to wrap up. We need to clear the room.

>> Our last question comes from Eric.

>> Hello. I'm from Arizona State University. On the very broad question. I'm planning on somebody and application here but I tend to come mostly from the NIH oral. I've been trying to get -- I need the into planet -- interdisciplinary nature of the focus, what is the review panel made up of and how should somebody, when they are think about writing, think about who will be on the panel. What information can we move quickly on the process is actually quite simple. We receive the proposal, we classify them into groups of similar proposals. And then we recruit reviewers to cover most of the aspects of that group of proposals. If there are proposals that are outside of the expertise of the reviewers that we were able to get for that panel, we will do an ad hoc review. Send a proposal to a specific individual that has expertise that are missing from the panel.

>> Perfect. Thank you very much.

>> I think we need to wrap it up. I would like to say is the questions that were submitted by e-mail will be answered been added to the website in the next couple of days. Don't worry about that. I would like to thank everybody for participating in this webinar and I am looking forward to receiving fantastic come a innovative proposals. Thank you.

>> That concludes today's call. Please disconnect or line at this time.

>> [ Event Concluded ]