U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES

INTERAGENCY AUTISM COORDINATING COMMITTEE

STRATEGIC PLAN UPDATE

Working Group 2 – Question 2 – How Can I Understand What is Happening?

Conference Call 1

WEDNESDAY, SEPTEMBER7, 2016

4:00p.m.

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PROCEEDINGS:

DR. SUSAN DANIELS: All right. Thanks, everyone. If we could have folks just go around and quickly identify yourself and say just a little bit about what you work on so that the group can get to know who's on the call. So Louis, would you start?

DR. LOUIS REICHARDT: Yes, I'm Louis Reichardt, Director of the Simons Foundation Autism Research Initiative formally a developmental biologist, neurobiologist at the UCFF.

DR. DANIELS: Thanks. Jim, would you like to say something?

DR. JAMES BATTEY: Sure. This is Jim Battey. I'm the Director of the National Institute on Deafness and Other Communication Disorders and we support a modest portfolio of grants doing research into autism as it relates to communication disorders.

DR. DANIELS: Thank you. Kevin?

DR. KEVIN PELPHREY: Kevin Pelphrey, Director of the Autism and Other Developmental Disorders Institute in Washington, D.C. and I study (brain) development in autism.

DR. DANIELS: Great. And all three of the folks that have spoken so far are members of the IACC and we have one other member of the IACC who's on the call, Nicole Williams.

DR. NICOLE WILLIAMS: Hi, this is Nicole Williams. I am the program manager for the DoD's autism research program. We're also a funding agency that funds research -- basic research

looking at autism, all the way up to clinical trials and behavioral intervention.

DR. DANIELS: Thank you. (Kasha)?

DR. KATARZYNA CHAWARSKA: This is Kasha Chawarska. I'm at (Yale) and I am a clinical and developmental scientist, and I study how autism develops in infants and in toddlers, and I study attention also (predictives of) outcome and clinical needs.

DR. DANIELS: Graeme?

DR. GRAEME DAVIS: Hi, this is Gray Davis. I'm at the UCSF Department of Biochemistry. We study - we do genetics, model organisms, primarily (*Drosophila*) to study the homeostatic control of neural function and neural development, and more recently, the interface of homeostatic signaling systems and autism genetics.

DR. DANIELS: Thank you. Guopoing?

DR. GUOPING FENG: I am a professor of neuroscience at MIT. I study (synapse) development and dysfunctioning autism, primarily use animal models, especially mammalian models for study autism.

DR.DANIELS: Heather?

DR. HEATHER CODY HAZLETT: Yes, my name is Heather Hazlett. I'm at the University of North Carolina. I'm a pediatric nurse psychologist and I'm using neuroimaging to study brain development and autism and related disorders in children. So Fragile X, Down Syndrome, and autism of course.

DR. DANIELS: Thank you. Shafali?

DR. SHAFALI SPURLING JESTE: Hi, everyone. I'm Shafali Jeste. I'm a pediatric neurologist at UCLA. I'm an investigator in our Center for Autism

Research and Treatment. And in my lab, we use EEG and other methods to study brain development in several high risk genetic syndromes such as TSC and Dup15Q syndrome, and we also study babies at risk for autism based on having older siblings with autism. So we integrate EEG with behavior to really understand risk, and heterogeneity, and outcomes.

DR. DANIELS: Thank you. Eric?

DR. ERIC KLANN: Eric Klann, Center for Neuroscience at NYU. We study translational control mechanisms and synaptic plasticity in cognitive function and how these translational control mechanisms are dysregulated in mouse models of neuro-developmental disorders such Fragile X, TSC, and non-syndromic ASD models.

DR. DANIELS: Thanks. Jaime?

DR. JAMES MCPARTLAND: Hi, I'm a clinical psychologist (at the Eltev) study center in Atlanta, (social) neuroscience research in autism and in other disorders affecting social cognition.

DR. DANIELS: Great. Christine?

DR. CHRISTINE NORDHAL: Hi. I'm at UC Davis Mind Institute. I use neuroimaging to study brain development in young kids with autism, currently focusing on sex differences in females.

DR. DANIELS: Thank you. Elizabeth? Oh, she's not on the call. And Flora?

DR. FLORA VACCARINO: Hi, I'm Flora Vaccarino, the (Yale Child) Study Center. We use stem cell used for (unintelligible) stem cells modeling to study early cortical development in autism and other developmental disorders.

DR. DANIELS: Wonderful. Well, thank you for going through these introductions so that everyone

can get to know you. I sent out a few materials to the group and these materials are also posted online for any member of the public who might be listening to the call. So if you'll go to the first item, it's the strategic plan for autism spectrum disorder structure. This is the information that I kind of went over in the April meeting of the IACC to talk about the structure for the strategic plan update.

Many of you know the IACC strategic plan is framed around seven consumer based questions. Question one, which is about screening and diagnosis, and the title of that chapter is "When should I be concerned?" Question two, "How can I understand what is happening?" which is about the underlying biology of ASC, which is the focus of this particular working group.

Question three, "What caused this to happen and how can it be prevented?" Which is on risk factors, both environmental and genetic.

Question four, which is on "Which treatments and interventions will help?" Which is about treatments and interventions. Question five, "Where can I turn for services?" Which if focused on services and service systems. Question six, "What does the future hold particularly for adults?" Which if focused on issues across the lifespan and adult issues.

And question seven is a question, what other infrastructure and surveillance needs must be met that has been a landing place for a number of other issues that didn't fit as well into some of the other questions, including research infrastructure, surveillance.

It has had research workforce and then collaboration and outreach have been some of those topics, although in discussions with the IACC over the last few months, we discussed having workforce issues covered more in the other chapters because

under the latest law, the Autism Cares Act, it requires that the IACC continue to produce an annual update of its strategic plan. The first version of the strategic plan was released in 2009 and in 2009, 2010, and 2011, they produced different objectives in the strategic plan, and now the total number is 78 different objectives.

And my office, the Office of Autism Research Coordination at NIMH, has been tracking progress toward the objectives in the strategic plan over the last several years, from 2008 through 2013 is the latest dataset that we've analyzed. And now, it's time to update the strategic plan again but the new law has asked the IACC to include more information about services and policy issues in the strategic plan update.

So we will be doing that. And the question 2, because it's focused on research, there might not be as many services issues, particularly, but there definitely may be some policy issues related to research that this group will want to include in the strategic plan update.

Below the list of all those questions in the strategic plan is an outline for the strategic plan update, which follows pretty closely with the current -- the 2013 version of the strategic plan. The document will have an introduction. Then there will be a description of the question area. So for question two, well, this will be repeated for all seven areas but there will be a description of what's in question two and the aspirational goal for the questions, which I will pull up for you, which is the aspirational goal for this chapter is discover how ASD effects development which will lead to targeted and personalized intervention.

So it's a lofty kind of long range goal for the area where we want research to lead. There will be a section that's on progress toward the current strategic plan objectives, the 78 objectives that are existing and that's what we're

going to be talking about on today's call. Then the next task of the working group will be on call number two, to do this next section, overview of progress in the field where we'll be talking about updates on research, so different advances that have been made in the science, any advances that have been made in practice to research, and identifying various gaps, opportunities, and needs in the research areas.

And we also will be talking about services and policy updates. So if there are any new programs or policies, or any particular needs for changes in policies to enhance research, new research evidence that can inform policy, or services needs and gaps, or needed policy changes. So that will be the topic of our second conference call.

And we also will discuss progress toward the aspirational goal. So each time the committee has done an update of the strategic plan, they've tried to evaluate where we're going in terms of the aspirational goal, is the aspirational goal still appropriate and are we making progress toward it and what else is needed.

Something new that Congress has asked the committee to do is to provide some recommendations to ensure that there is not duplication of effort being made, in particular related to research but it could also be for any other areas. So I will be asking you today as you have looked at the portfolio to let me know if you see areas where there could suggestions for reducing duplication if there is any duplication or avoiding duplication.

And then the third conference call will focus on the next portion, which is identifying or developing new strategic plan objectives to replace the 78 current objectives. And the committee decided as a group, agreed that we should have about three broad objectives for each of the seven questions, which would leave us with

21 objectives for the whole plan, which I think will be a much more manageable number for the committee to keep track of and report progress on. And so we'll take the objectives and make them broader. In the current strategic plan, some of the objectives are very narrow and kind of based on particular types of projects. And so we might broaden those out to talk about entire areas of progress we want to make and then provide examples of the kinds of projects that would be responsive in relation to each objective.

So by the time we get to the third call, we'll be thinking about prioritizing and what are the key areas where we want to make progress and want to identify in the objectives for this chapter. And the strategic plan is also required by Congress to include some kind of budgetary requirements and so after the objectives have been created, the committee will discuss how that's going to be done and whether the budgetary requirements will be made for the objectives or they would be made for the questions, depending on how the strategic plan looks and what makes the most sense and will be most useful to the community. And then there will be a summary for a conclusion on the strategic plan.

So that's the structure of the document, but today we're going to be talking about progress toward the current strategic plan objectives. So does anyone have any questions about all of that?

(Silence.)

DR. DANIELS: All right, my office has created a set of questions that we can go through to look at the research portfolio. So my office has performed an analysis of the 2013 portfolio. So we collected information from all of the federal funders that are involved in autism as well a number of private organizations that are involved in autism and they graciously provided their data to us and we've analyzed the data according to the

strategic plan objective to try to identify what research is being done that relates to these objectives and how much progress has been made over the year.

If you look at the attachment for the documents about data analysis, on the first page we provided just a brief overview of federal versus private autism research funding and of the different funders that we included in our analysis, 76% of the dollars that were spent were federal dollars and 23% were private, which is roughly similar to how it's been over the last several years. So that was one item that we provided. The next page in this documents shows the percentage of 2013 funding by agency and organization, and roughly you can see that about more than half is NIH funding, 16% Simons Foundation, 6% Autism Speaks, 6% CDC, 7%, The Department of Education. So you can see kind of the distribution across funders and then we provided very specific information to the side in a table so the committee can understand this across the entire research portfolio. So this is not just for question two. This is for everything.

The third slide shows the percentage of funding that's currently assigned to each of the different question areas. So question two, our basic research area has about 31% of the funding at the moment, which has fluctuated a little bit in either direction over the last few years. But I don't think that there's been a dramatic change in that and the exact dollars are listed in the table below.

The following slide is about alignment with IACC's strategic plan objectives. And so this shows that 75% of the projects that we collected from the various agencies and organizations were related to objectives in the strategic plan and about 24% of the funding was related to -- was not related to objectives, but the strategic plan objective focused on areas that the committee felt

were underrepresented in the portfolio and so they created those objectives to encourage more research in those areas. But this other 24% is probably more focused on areas that were already quite well underway at the time of the strategic plan was formulated, or they may also be related to new and emerging areas.

And when you break down the projects that were not directly related to a strategic plan objective, if you look at the next slide in question two, biology, this is the area where we have the most projects like that, about 50% that are not related to objectives and this is because in the basic research areas, the well-funded area and there are a lot of projects that are related to research that's been ongoing for some time and was not specifically highlighted by the committee.

Nevertheless, it's important research that is contributing to the field. So that was what that is showing you. So of course, I'll give you some time for questions in a minute. Just wanted to go through these slides first with you. The next tables shows you the amount of funding that was provided that related to these objective in 2013 and if it is green that means that it is greater or equal to the recommended funding for that year and we -- in OARC -- so the committee developed recommended budgets for each of these objectives that was going to last over several years. In order to get a sense of whether the research is tracking with the recommendation, OARC annualized that budget and estimated approximately how much you'd have to be spending per year to be reaching that recommended budget.

And so if it's green it means that it was either equal to or greater than the recommended budget, and yellow means that there were some projects but it was not at the level of whatever the estimated annualized budget was that was projected. And so you can see that everything is in green or yellow for question two. If there had

been something that had no projects it would've been red but there aren't any for question two.

And on the final slide in this set just shows you…

(Lost signal.)

DR. REICHARDT: Excuse me. Did you just go down or is somebody there?

DR. BATTEY: Susan, we've lost you for a minute?

DR. DANIELS: Oh, you did.

DR. BATTEY: Yes.

DR. DANIELS: Okay. So I'm on the last page of the packet. Is that where everybody else is?

((Crosstalk))

DR. REICHARDT: Start there. It would be fine I think.

DR. DANIELS: So I was just saying that OARC)did an analysis by scientific subcategory to help people better understand the general content of the portfolio because the objective, as you can tell by reading the objective, sometimes lump the number of topics together and they're kind of long and very specific at times. And so we tried to come up with some general subcategories of research that were represented by the -- in the portfolio and show you what the distribution was of (unintelligible) for the year. And so you can see, generally like some of the larger areas or the areas that had more funding were molecular pathways, subgroups, and bio-signatures, and neural systems.

But there are a number of different subcategories there just to give you a sense of

the kinds of research that are in the portfolio, including ones that did not fit in any objective. So that is the kind of overview of what's going on in the portfolio in section two. Did anyone have any comments or observations on this portion and on the overall portfolio?

(Silence.)

DR. DANIELS: Anything that you found surprising or concerning or things that you thought were good signs of progress? Anything like that?

DR. REICHARDT: I would say the general thing is clear the side is pay any attention to these aspirations if they recognized opportunity. I mean there are huge discrepancies from the aspirations and I suspect that it was because some of the studies were perhaps unrealistic at this point or very challenging given the status of the American health system.

DR. DANIELS: You mean the aspirational goals?

DR. REICHARDT: Yes.

DR. DANIELS: So the aspirational goal is meant to be kind of a lofty objective. So personalized medicine probably is still a future aspiration and so there probably isn't that much research that is directly related to personalized medicine. So now that is the eventual goal that we would have personalized treatment for various disorders, including autism. In terms of anything else about the distribution of anything or progress that's been made on particular objectives. If you look at the multiyear funding table that we provided, it gives you a little bit of history about how these objectives have fared over the years.

So for this question we've got nine objectives and you can see what the status was of these objectives each year that we've been analyzing the

portfolio. And again, when they're highlighted in green that means they met the estimated annualized budget recommendation and at the end, if they're in green that means they have fully met the overall budget recommendation from the IACC. Something in yellow means that there was work funded but did not meet the recommendation as yet. If you look at the second one, 2SB, it's very close to budget recommendation but hasn't completely reached it yet.

So that's kind of what the progress has been in terms of the objectives for question two. There aren't any that are in red status. Everything is underway. Do you have any comments about that or any other observations about that, that you want to note?

DR. REICHARDT: Again, it's small stuff but I'd say for example, it's clear that one hasn't met goals on regression. One has not actually amply met goals on female focus and this probably reflects again the opportunity in science.

DR. DANIELS: So some of that we'll want to reflect in the (unintelligible).

DR. REICHARDT: And diagnosis, which is her end point identification and analysis is extremely difficult obviously, and again, I think we're short of the goal.

DR. FENG: This is Guoping. I think one noticeable area in the (unintelligible) in the longitudinal studies a larger scale on human scales on (unintelligible) biological, clinical aspect and then environment, I think that probably is really, really important although it's very difficult to study biological aspects because of the lack of biomarkers and read out of biological functions. But that's very important area whether we can have much better animal models (unintelligible) humans that it can do the longitudinal study. It's a newer development

disorder understanding the environmental process. It's very difficult to figure out what's going on.

DR. DANIELS: Anywhere else where you think that there hasn't been as much progress as you'd like to see now that you think needs to continue to be emphasized in the new strategic plan?

DR. FENG: I definitely think so, yes.

DR. DAVIS: I guess the one comment I would make is that some of these goals stated on the left there for each of the questions seems to reflect the state of the science when those goals were written and things have actually progressed quite well. And so some of this also reflects the changing understanding of where we are now relative to then.

DR. DANIELS: That's true and that's why it's a good time for the committee to reassess and come up with new objectives. And so we want to work toward closing out these objectives and we're going to do one more assessment of the progress on the current objectives and then these ones will be closed out and we'll start on the new ones that this group is going to help develop.

Any other observations about particular areas that are represented in here?

(Silence.)

DR. DANIELS: Or anything that's missing that you think is an area you think you would have liked to see more of that doesn’t seem to be represented?

DR. BATTEY: Well, I'd be interested in what others that know more than I do about this might think, but I think one area where I don't see a lot of work ongoing that I think could potentially be quite fruitful and interesting is in epigenetic changes that are associated with the development

of autism and autism spectrum disorders. I don't know what others think about that.

DR. DANIELS: And question three does have an emphasis on both genetic -- well, genetic and environmental factors as well as epigenetics. So any of the epigenetic studies would be coded in there and so the question three group will see them. But it is a smaller portion of the portfolio at this point.

DR. BATTEY: If it's in question three then we don't need -- I mean it sounds like it's being covered then.

DR. FENG: Another area, it's not -- I don't think it's a deficiency). It's just not a really (unintelligible) but the last couple years of the advancement of genome editing, I think the person on advancement of genome editing is allow a goal but we need to start to explore the possibility for autism research because autism is such a genetically, heavily genetically influence the disorder. I think that area I haven't seen much of a study probably because of technology but I think in the future going forward I really think we should support some of the -- explore the many aspects of gene therapies. Because there are many monogenic that could present opportunity to start to explore the possibility of gene therapies or gene therapy related approaches.

DR. REICHARDT: I would say the sideline to that, reversibility is very important since so many of the genes act during development. So it's important to understand which genetic disorders are potentially reversible by Guoping's technique.

DR. DANIELS: We'll take note of those. Others?

DR. KLANN: This is Eric. One thing that I think is missing also is this idea of developing models that assess both genetic and environmental risk factors. So that takes into account some of

the things that had already been discussed. But as far as I'm aware, there's very few studies of let's say genetic models of ASD that are coupled with using the environmental risk factors that we know contribute to ASD and seeing how that plays out at the biological level.

DR. DAVIS: I guess I sort of have a question at this point is what we're trying to discuss. I mean it seems like a lot of things are being raised at the moment that are ideas of future focus based upon what we now know. And as I understood, we were sort of looking at the past and saying did we accomplish what was -- what we set out to do in 2008.

DR. DANIELS: Right, right and that's true. We -- I guess I can move to the next portion here where I've given you a listing of all the projects that were here. And as you looked through and I know that you might not have had time to read them all in great detail, but as you look through the projects that were funded in 2013 toward the strategic plan objectives, did you see gaps there? Anything that you would've thought should've been in the portfolio that wasn't or areas that you thought really were quite well funded, doing well? Various comments on the content of the portfolio. Do you have any observations there that we need to note in the strategic plan update?

DR. REICHARDT: My only comment would be -- and I know you've done this for me, (Susan). It's clearly going to be very helpful to look through what's in the other -- under the other question categories because I think that what's been funded under those categories may in fact contribute to filling gaps here.

DR. DANIELS: And that is true. When we do the coding for the projects we ask the funders to try to identify the best fitting category for each project and so we recognize that some projects may have been applicable to more than one area, but

for simplicity and to avoid double counting funding we had things categorized just to one area. So there may indeed be some projects that are coded elsewhere and so in the portfolio analysis report that our office will write, we usually try to note those things. For example, if there is an objective that looks like it's not where it needs to be, but we know of projects that are in another question, we usually note that and say there are three other projects in some other question area that also are responsive to this objective.

But that, I didn't want to overwhelm you with all of that information and have you looking for that.

DR. DAVIS: I think one of the things I was struck by was looking at the sort of state of the science in 2008 and realizing the progress that's been made even just recently, but also towards the end of this period that many things get set in motion and sort of real revolution began happening both in terms of gene editing as well as the genetics of the association studies. And it's really the -- what struck me is the adaptability of the system to those kinds of major changes in the field and what could be thought about that.

DR. DANIELS: What do you mean by the adaptability of the system?

DR. DAVIS: Well, you set things in motion with a five year goal but in the midst of that, a revolutionary change in one's understanding of the disease and that came with a lot of the genetics perhaps. You're now on a trajectory that seems unable to incorporate that with the speed that one might want.

DR. DANIELS: So we do reassessments of the portfolio or of the strategic plan on a regular basis. The committee has had times when it's been in hiatus because a new committee was being

formed, but other than that we try to do an annual update of the strategic plan and so that's the time when we can do those reassessments. In the first three years, the committee continued to modify the objectives although I think the committee found that after a while if you kept changing the targets as you go along, it was difficult to assess progress.

So in 2011, the objectives from that time have stayed stationary since then. And so it's now time for a refresh and they're going to come up with -- the group will help come up with new objectives, which will be in place for some time but there's always an opportunity in the annual updating process to note major new changes and updates. And so they usually do that but they don't always change the actual objectives.

DR. REICHARDT: One gap I don't think it was in the category, maybe it is somewhere else, is the contribution of (Somatic) post germ line genetics.

DR. MCPARTLAND: Yes, but that's also fairly recent, right?

DR. REICHARDT: It's very recent, yes.

DR. DANIELS: That also would be probably question three for genetic risk factors is where that would be categorized.

DR. REICHARDT: I'm a little puzzled by some of the things that were listed in question two, I'll just say, which seemed like pretty purely genetics.

DR. MCPARTLAND: I'm not sure that Somatic would be necessarily a risk factor as something that could be in fast causal and a molecular pathway.

DR. REICHARDT: That is what it is…

(Silence.)

DR. DANIELS: Anyone else want to share anything?

DR. JESTE: Again, this is Shafali. This could be more for the next round. But I think I would like to see more true transitional grants around the genetic area. There are so many nice beautiful studies looking at pre-clinical models and understanding mechanisms (unintelligible) more target the Treatment. Then we are doing some with humans where the outcome measure, clinical measures and imaging measure are not often informed of what we know in the animal model. And so I think that there is a real opportunity here with the level of science of what's being done to actually have truly translational collaborative projects that spans pre-clinical, the clinical population to help really understand mechanisms of disease. Because when you look at what these studies, again a whole host of studies that are just in pre-clinical models and the whole of other studies in small patient population (Unintelligible) disorders and it not critical to actually integrate as well as they could.

(Silence.)

DR. REICHARDT: one of the more dramatic…

DR. JESTE: I know it is easier said than done.

DR. REICHARDT: One of the dramatic revolutions that I think I hope gets incorporated in the revised strategic plan is we can say with much more precision now which parts of the brain are involved in particular behaviors relevant for understanding autism. We know much more of about the role for this trait and the forebrain, how the circuits work in each of these areas. For example, and so this really focuses potentially focuses through search and some people have already done this, look for the alterations in these brain

regions, it can explain the particular behaviors. I don't think this was understood in 2008 with the same precision.

DR.DANIELS: Those observations about, you know looking back it is striking when you are able to look back at where we were in 2008. I think those types of observations are really valuable. And probably are something that we might want to incorporate into its own little paragraph or a paragraph or two in the strategic plan update. Because I think this group has been involved in the research for a number of years and it has that longer term vision for where the field is going and so it would be great to have more of that and we could do some of that in writing offline.

(Pause.)

DR. REICHARDT: So Susan. I am very curious. I mean how this is actually going to get done.

DR. DANIELS: How what is going to get done?

DR. REICHARDT: I mean there are a large number of us. Everybody is not going to write their own version of every part of this. I mean how are you planning to move forward to prepare a written document.

DR. DANIELS: So in the past. So we have done this a number of times. We've produced strategic plan updates for several years. So what we do is get some of the folks to volunteer who do some of the drafting. And sometimes groups have asked people that had certain types of expertise to write various pieces. Keeping in mind that this strategic plan update needs to be fairly brief enough that people will actually pick it up and read it. It's not a strictly scientific document. So it's meant for the lay public to be able to read and even members of congress or their staff. So it needs to be at a level where they can understand the information. We use references to

try to point people back to the original research. But we usually have maybe 1 to 3 people that volunteer to do an initial draft and then have it passed around and have other people add in pieces or do some editing. So it has worked in the past. I trust I think this group would be able to do it too. But you know…of course…

DR. REICHARDT: That seems fine. I was just curious…

DR. DANIELS: Yes…So of course OARC is also able to help quite a bit with various parts of it. And we are taking careful notes and can provide some of that information to folks that are helping out with writing and of course our team will also help editing. Especially since there are going to be seven different groups writing various parts and we want it all to harmonize and be in a fairly similar length and tone and everything. (noise) We will assist wherever possible. (noise) So did anyone have any concerns about the budget in terms of what was spent or what was not spent. Where there any things that need to be noted in the update or were you comfortable where things were.

DR. BATTEY: No…I think…This is Jim Battey. I think it is largely driven by opportunity. As it was noted before. And the thing about five years is that it is a long time in research. Things change over five years and certainly the opportunities have changed tremendously in the last five years.

(Pause.)

DR. DANIELS: Can you hear me?

(Crosstalk.)

DR. DANIELS: Sorry the phone seems like it is cutting in and out a little bit. I had asked the group if you had any particular observations, concerns, suggestions regarding duplication of

effort and how duplication could be avoided or if you observed anything that you felt or looked like it might be a concern related to a duplication of efforts. This is something that congress had asked the IACC to consider when doing the strategic plan update so I just wanted to give you an opportunity to comment on it.

DR. DAVIS: I had one thought about it…

DR. REICHARDT: I had…

DR. DAVIS: Sorry…Go ahead…

DR. REICHARDT: Sorry Gray, I just want to say I will try to send comments, but after looking at the other list of grants I think. Yes, which I haven't done yet.

DR. DANIELS: Sure. I am happy to provide those lists to others if you feel you want to look at them although it is a lot of projects.

DR. BATTEY: I would offer the idea that maybe we should be cautious about being too diligent about avoiding duplication. Duplication research is not all a bad thing. Reproducibility is not always a bad thing.

DR. DANIELS: Absolutely…

DR. FENG: I agree with that. I think that it is important to gather important findings that is being produced in another lab in another study of the experiment condition, even with another group of patients. That is an important aspect. As long as they are from another group. I don't see I think we should be cautious.

DR. DAVIS: This is Gray. That was actually what I was going to say. But with trying to figure how one couches that when considering the care there is deciding whether something is a truly

duplicative study or whether it is important enough to be in that duplicative range.

DR. BATTEY: Well, I would use the word—

DR. DAVIS: I completely agree that this reproducibility in science is kind of, which we are all aware of these days is absolutely heart and soul over having things reproduced.

DR. BATTEY: Yeah, I think that is a better word to use than duplication. I would stay away from that word.

DR. DANIELS: And that's fine. That tracks with things the committee had said when discussing this issue in the past. And Dr. Insel who used to be our Chair certainly emphasized that when discussing this issue. So I'm sure the committee will want to include that in any kind of statement in the plan. Wanted to give you an opportunity to comment. Anyone else have anything to say regarding duplication or replication or reproducibility?

(Pause.)

DR. DANIELS: Right, not hearing any other comments on that. So I think that we've basically gotten through our agenda. Number five on my list of questions was; are there areas in emerging research that do not appear to be represented strongly in the portfolio that should be considered for mention in the new strategic plan. And I think some of you touched on those. But we will have more opportunities to talk about those on the next call. So unless anyone has anything else they want to add to this discussion we can move to wrapping and setting up for the next call.

So, on the next call we will be talking about advances that have been made in research in recent years, especially in the past couple of years but you can also feel free to make observation in…in

fact maybe I'll work that into the agenda to make sure we make observations in general about progress that has been made since 2008, and 2009 when the strategic plan was developed. And how that field has changed and we'll want to note any emerging areas of research, opportunities, major gap and needs. And we will also be discussing research policy issues. So if there are any issues related to ethics or policy or wanting to further develop the workforce for research. We'll want to bring those up on the call. I will provide you with an outline of all of that prior to the call, so that you have all of that information.

DR. BATTEY: Susan, it might be helpful in advance of the call to collect up any advances that individuals who participate on the call might have noted.

DR. DANIELS: Yes.

DR. BATTEY: That might just expedite the discussion a little bit.

DR. DANIELS: Sure, we can do that. We also have the advances that the committee has been collecting but I know with these working groups we have a number of external experts who may have other input so we'd be happy to do that and I can ask you for those in upcoming emails to provide that prior to the next call and we can provide a list to you. Is there anything else you feel you would want from us to help you with going through that information for the next call?

So I think then you've completed your task for today. We're going to develop some notes that we can use in the writing and I'll be working with the co-chairs to talk about the plan for drafting and we'll get into that a little bit more on the next call and be starting work on the actual writing. So well, we really, really appreciate everyone being here on this call and for your efforts looking through this material and

providing comments. And we look forward to continuing to work with you.

So thank you very much.

(Whereupon, the conference call was adjourned.)