

Community Advisory Council
March 11, 2010
Action Items/Notes

Final

These notes are in the following order:

1. Attendance
2. Correspondence and Handouts
3. Administrative Items
4. Update on NASA Research Proposal at BNL, Steve Vigdor
5. Community Comment
6. Agenda Setting
7. Energy Conservation and Sustainability Efforts at BNL, Mark Toscano, Energy Manager

1. Attendance

Members/Alternates Present:

See Attached Sheets.

Others Present:

J. Amabile, S. Aronson, M. Bebon, P. Bond, J. Carter, C. Conroy, J. D'Ascoli, N. Detweiler, D. Durrang, L. Garber, K. Geiger, P. Genzer, N. Gittel, M. Holland, M. Israel, C. Janovsky, S. Johnson, D. Lowenstein, M. Lynch, M. Madigan, R. McKay, J. Primiano, G. Proios, A. Rusek, J. Sims, I. Smith, P. Sullivan, K. Thayer, M. Toscano, J. Usher, P. Yamin

2. Correspondence and Handouts

Items numbered one and two were mailed with a cover letter dated March 8, 2010. Items three and four were available as handouts at the meeting.

1. Draft agenda for March 11, 2010
2. Draft notes for January 14, 2010
3. Copy of presentation - Update on Research Proposal for NSRL at BNL, Steve Vigdor
4. Copy of presentation - Energy Conservation and Sustainability Efforts at BNL, Mark Toscano

3. Administrative Items

The meeting began at 6:38 p.m. Reed Hodgkin reviewed the ground rules and the agenda. Those in attendance introduced themselves.

Member Garber asked if there will be a local memorial service for Dr. Chaudhari.

Peter Bond said a service had been held in Westchester.

Approval of Minutes

Reed asked for corrections, additions, or deletions to the January 14, 2010 draft notes. Member Blumer said that on page three the comment by Mark Toscano should say, the intention of the \$2 million from BP is to preserve some land to make up for the 160 acres, rather than, to help restore some of the habitat and to find other areas to be purchased to make up for the 160 acres. She also said that on page seven, Toscano's comment should say there is a 20-year

purchase power agreement, which is \$298 million over the next twenty years, instead of over the next four years

The notes were approved as amended with two abstentions.

4. Update on Research Proposal for NASA Space Radiation Laboratory (NSRL) at BNL, Steve Vigdor, Associate Laboratory Director for Nuclear and Particle Physics

Steve Vigdor explained that NSRL is a user facility that is funded by NASA and open to use by experimental groups from around the world. He said that beams are used to simulate radiation exposures that would be encountered in space travel. All experiment proposals undergo rigorous, multi-step scientific, environmental, safety, and health reviews. Approval of proposals for scientific merit is done by NASA (National Aeronautics and Space Administration). BNL evaluates proposals for beam time based on technical and schedule restraints. There is a multi-step review process for NSRL proposals that are administered by NASA, BNL, and by the Principal Investigator's home institution. Experiments go through a rigorous evaluation of their scientific merit and importance to NASA's goal of safe and effective space exploration, appropriateness and feasibility of NSRL use, appropriateness of any animals involved for providing critical new information illuminating human response to space radiation, animal care and use protocols consistent with the highest standards of humane treatment including the Animal Welfare Act and the Public Health Service, and adherence to all relevant environmental, health, and safety regulations.

This proposal, called the N-249 Ground-Based Studies in Neurobehavioral Biology, calls for exposing non-human primates to ionizing radiation at the NSRL. NASA must set astronaut health and safety standards and evaluate risks for missions beyond low earth orbit. This experiment hopes to determine the long-term central nervous system risks to humans in extended stays in outer space. Prior NSRL studies with rodents suggest detrimental effects; however, how these results apply to humans is unclear.

This experiment would involve 30 adult male squirrel monkeys that would stay briefly at BNL. The proposal calls for exposures of four sets of monkeys each to low doses of iron (0.1 and 0.5 Gy), protons (0.5 and 1.0 Gy), and silicon (0.1 and 0.5 Gy), with a control group of six monkeys unexposed to radiation.

The selected ion doses are representative of the species encountered beyond low earth orbit and are considered to be the maximum to be encountered by astronauts for extended (months to years) Moon and Mars missions. The proton doses represent the likely solar and cosmic ray proton doses. BNL involvement would end when the animals are transported back to McLean Hospital for long-term (4 years) evaluation of neurobehavioral effects.

McLean Hospital has completed the Institutional Animal Care & Use Committee (IACUC) review. BNL has sent back the IACUC protocol for more information and clarification. NASA has completed a review of the use of non-human primates as an appropriate research model and has approved McLean's grant proposal. The Scientific Advisory Committee for Radiation Research (SACRR) met to advise on the merit of requested beam time. There are four more reviews in progress that would have to occur before beam time is approved.

Member Chaudhry said many scientists have already gone into space. He asked why this wasn't done before.

Vigdor said some experiments have been done previously, but none have been decisive. He said this study is looking at long-term missions into deep space which has not been done before.

Member Mannhaupt asked why squirrel monkeys will be used.

Vigdor said this is a result of NASA reviews. Their genetic system is similar to humans and their behaviors can be trained and then be monitored to see if it is affected. They also are small which makes it easier to get whole body exposure from the beam line and simulate what would actually happen in space.

Member Kaplan asked for an explanation of a Gy unit of measure.

Vigdor said .1 Gy (gray) is four times the dose received from a CAT scan. The dose is smaller than what is given in radiation therapy.

Member Esposito asked if SACRR gave a recommendation. She also asked when all the reviews will be completed.

Vigdor said SACRR found this to be a sensible use of the beam. There is no fixed timeline. This is not imminent.

Member Kaplan asked if any of the reviews could be show-stoppers.

Vigdor said every one is a potential show-stopper except SACRR because that is an advisory committee. There are corrections being made along the way.

Member Peskin asked where the animals are now.

Vigdor said he does not know where the animals come from.

Member Mannhaupt asked for clarification of the dose compared to the actual dose a cancer patient receives based on the type of radiation treatment. She also asked what the dose rate is based on, and how it is known how much an astronaut would be exposed to in space.

Vigdor said a normal radiation therapy dose is divided up into fractions so the healthy tissue surrounding a tumor can recover. This is smaller than a single fraction of a typical radiotherapy dose. The dose rate is calculated by NASA based on their models and calculations.

Member Graves asked what was seen in the rodent experiment that suggested using monkeys for this experiment.

Derek Lowenstein, Collider-Accelerator Dept., said it was some of their behaviors.

Member Talbot asked if BNL has any experience handling squirrel monkeys, and if not, will the employees be trained.

Peter Bond, Senior Advisor to the Director, said squirrel monkeys have not been to the Lab, but the Lab has experienced animal handlers. He said there is very little handling of the animals.

Vigdor said the Principal Investigator has a lot of experience with squirrel monkeys.

Member Giacomaro asked why only male monkeys are used.

Vigdor said he did not know.

Member Shea said they will not find out if there will be any affect on the offspring. She also asked how long the monkeys will undergo radiation exposure and if there are any ethicists involved in any of the review committees.

Vigdor said this is a one-time exposure with different doses. Then the experiment will consist of four years of monitoring.

Bond said everyone on the IACUC Committee has been trained in ethics.

Member Garber commented that as everyone sits here, there are two cosmic rays going through us every second. He then asked if this project is rejected, what will be the fate of the monkeys.

Vigdor said he doesn't know if they have even been selected yet.

Member Chaudhry asked about using gorillas since they are closer to humans.

Vigdor said he assumes the various reviews of the appropriateness of the animal model have determined the squirrel monkey to be the best choice. He does not know the details.

Member Bush asked if this is a one shot exposure, how is it comparable to the long exposure of astronauts.

Vigdor said the interest is in the effect of the heavy nuclei. Previous studies have shown that the effects of heavily ionized radiation are not sensitive to dose rate.

Member Kaplan asked what the result of the SACRR committee was and what goes into that.

Vigdor said it was determined to be an appropriate use of beam time. The outcome is useful. It is a reasonable use of beam time. The real decision determining scientific merit is made during the NASA review.

Member Kaplan said based on NASA's review of appropriateness, scientific relevance is accepted.

Vigdor said that is correct, except NASA's review of the appropriateness of the animal model is still ongoing.

Member Kaplan asked how SACRR can make a decision when NASA has not made a decision yet.

Vigdor said he does not know why NASA has two levels of review for the appropriateness of the animal model, possibly because of all the public interest.

Member Mannhaupt asked why the proposal was sent back in January.

Bond said there were a number of questions about the proposal, so it was sent back for clarification. It was a use issue, not a care issue.

Member Mannhaupt said the animal model is the thing of concern to most people.

Vigdor said that is one issue. There is also the issue of why this is being done now when there is no Mars mission planned. NASA's answer to that is that this is a five-year time line experiment and it is conceivable that it will lead to another experiment. The concern is that when

a Mars mission is possible, they won't have access to this data. The time and the funding are there now. There are also a lot of technical questions.

Member Graves asked if any other countries are doing similar research and if there are plans to share the results Internationally.

Lowenstein said space radiation research is being done in Germany; however, he is not aware of any non-human primate use. The information will be published and made available to everyone.

Member Giacomaro asked if NASA has completed their research on the protection of human beings in space travel.

Vigdor said there are ongoing experiments.

Lowenstein said there is no final answer to the question of what can be given to minimize the effects of ionizing radiation.

Member Esposito said global experts disagree with NASA regarding long-term low dose exposure opposed to short-term high dose exposure. She also asked for an explanation of low dose. Is it relative to a monkey or human?

Vigdor said with regard to heavy nuclei exposure the data suggests the rate of delivery is not important because the rate at which the dose is given to the body is very high. Low dose is relative to previous experiments with mice, which were given much higher doses.

Member Kaplan said he represents Friends of Brookhaven and he feels this is a crucial review. He suggested that the SACRR recommendation be withdrawn. They should wait until the next review is complete to determine appropriateness.

Vigdor said the final decision depends on the entire suite of reviews, SACRR is only a recommendation.

5. Community Comment

Reed Hodgkin asked if anyone in the audience is interested in making comment to the CAC. Three people raised their hands. He invited each of them to come up and spend two minutes making their comment and then taking a minute or two for the CAC to dialogue with them.

Noah Gittel: I am the Research and Education Programs Coordinator for the Physicians Committee for Responsible Medicine. We are a national, non-profit organization comprised of physicians, scientists, and lay persons. We have over 10,000 members and supporters on Long Island alone. First of all, I really appreciate the opportunity to come and speak to all of you. My experiences with Brookhaven so far have been fantastic. Everyone has been extremely helpful and really interested in what we have to say. I really appreciate that. I had some remarks planned, but I'd like to respond to a few of the things that have been said already and I would love to take some of your questions. I may be able to provide some illumination on some of the things that are still unclear.

The first thing is about this Institutional Animal Care and Use Committee that is still waiting to approve these experiments. It is true that they requested modifications. They did approve the experiments unanimously pending these modifications. We have seen the minutes of that meeting. The modifications that they requested are, in our opinion, not substantive modifications. They are things like requesting justification for the number of monkeys used. It

does not seem like, in our opinion, that there is a question whether or not these experiments should proceed. I really consider all of you the last line of defense. I know there are other committees that are still meeting. But in terms of actually getting to the guts of this matter and looking at whether these experiments are appropriate on ethical and scientific levels, I am appealing to all of you.

This issue of deep space travel is really very crucial and it is true that we are not going to Mars right now. This is not in the plan for NASA. It was when this grant was announced. It was under the Constellation Program, which former President Bush started in 2004 and involved us going to the Moon and then using that as a launching pad to go to Mars. However, when President Obama took office, he ordered a review of NASA's plans and in January or February of this year he announced his new budget, and in that budget he ended the Constellation Program. He used the money that would have gone to sending us to Mars instead to incentives for private space travel. So, whether or not we decide to go to Mars again one day, I can't tell you, but I do know that right now we have no plans to go to Mars. NASA has explicitly stated that as the purpose of these experiments. So, I cannot see any reason why these experiments should continue and what their value is right now.

There is another issue, which is the extrapolation of data from non-human primates to humans. You heard Steve say that the extrapolation of data from mice and rodents to humans doesn't work. The extrapolation of data from non-human primates to humans also does not work. NASA and the U. S. Air Force and other federally funded agencies have conducted four decades of space radiation research involving non-human primates. You know what they got out of it, nothing. I don't know if any of you remember a movie called Project X. Does anyone remember that? They took these chimpanzees, irradiated them and had them fly flight simulators to see if they could continue their mission. This is exactly the same thing that has already been done. The conclusion of the authors of a summary report of the four decades worth of research on non-human primates is: The attempted extrapolation of these experiments from non-human primates to humans would be more dangerous to astronauts than the radiation itself. You cannot extrapolate this data when it comes to radiation experiments.

This issue of single versus fractionated dose that was brought up is crucial also. Even when it comes to heavy ion doses, as has been discussed. The U. S. Air Force and NASA have tested this proposition before in those four decades worth of research and they found that regardless of the type, dose, and delivery schedule, single radiation exposures do not correlate in any way with repeated or continuous exposures. You are giving a single dose of radiation equivalent to the maximum that a human being would get to a one to two pound squirrel monkey. That is not going to tell you anything about what a human being would experience on a three year trip to Mars with repeated doses of radiation.

I am about to get cut off, I just want to close and say I am urging all of you to recommend to management that these experiments be stopped before they begin. They are unnecessary, they are going to cause great detriment and possibly death to the animals involved. They are not going to tell us anything about human space travel and frankly, I am afraid they could sully the name of this organization, which has an otherwise exemplary record. I would love to take any of your questions if you have any.

Reed said we will take a question from Pat. I am only going to be able to take one question at this point if you want to continue, we can...

Gittell: Can I just say one thing? I have a review of the protocol available on the desk and I'd love to talk to any of you during the break.

Member Esposito: I'd like to know why we are cutting him short. Let's talk. What's the big rush?

Reed: If you would like to add more time on your agenda now to discuss this with the presenters, we can do that. I want to make sure we get to everyone who wants to make comment as well and not just focus on one.

Member Mannhaupt: Why not, let's all chat.

Reed: Would you like to add some time now?

Member Esposito: I think if someone comes to us and has something to say, I'd like to listen to them.

Reed: Ok, is that okay if we give it a few more minutes.

The CAC indicated they wanted to spend more time on the topic.

Reed: Then that will be great. The folks want to discuss this with you, can I go to that.

Gittell: Absolutely.

Member Henagan: I have a couple of corrections to what you stated. First of all, I'm not sure if you are aware; the White House issued a directive to NASA this week requesting a proposal for a manned Mars mission.

Gittell: I have not seen that.

Member Henagan: It was issued today or yesterday, I can't remember, but it was issued this week. Requesting a proposal with funding requests and so forth so funding can be done for this. Secondly, Project X was a totally different type of radiation. It was designed for low earth exposure. It was the same type of radiation exposure as a nuclear reaction. This is a different type of radiation, as was pointed out previously. So, Project X is not a comparable point for this project. That's just a point of clarification.

Gittell: I used Project X as an example because I thought people might know about it. In the review of the protocol that I have, we cite all of our references, at least four decades worth of space radiation research and I encourage you to take a look at it.

Member Henagan: That's all been a different type of radiation.

Gittell: That's correct. It was a slightly different type of radiation.

Member Esposito: Do you have any other significant points that you feel you didn't have time to say that you would like to raise?

Gittell: The one thing I wanted to say. The galactic cosmic rays that were mentioned, which is what is to be expected in deep space, there is great debate as to whether they are completely reproducible on earth. What is being used here is similar. It is protons, heavy iron and heavy silicon. However, galactic cosmic rays are comprised of numerous high energy heavy ions that also include carbon, nitrogen, calcium, oxygen, manganese, argon, and neon. So it's not an exact reproduction of what is found out there. Even just last year, a review by 38 space and radiation scientists from ten nations around the world began with this statement: The galactic cosmic ray environment is the most complicated mixture of radiation known and it is doubtful that that environment will ever be adequately simulated in the laboratory for biological experiments. That is also cited in our review if you want to check the reference.

Member Esposito: Thank you.

Reed: I am going to watch the length of this discussion to make sure we have enough time for our other commenters.

Member Peskin: I am not familiar with the Physicians Committee for Responsible Medicine. Is there a webpage or something I can go to and find out what the credentials are?

Gittell: Absolutely. It's PCRM.org and you can link to our issue pages on this specific issue. I can tell you very briefly that we are a national non-profit organization and we have a broad mission. We focus on preventive medicine, especially nutrition. We conduct clinical research. We have been funded by NIH, and we also advocate for ethical and effective practices in medicine and research. When I say ethical, we don't believe animals should be used for research or medicine, we feel it violates a core principle of medicine which is: *do no harm*.

Member Guthy: I would need to know what you would test on in order not to do it on our astronauts the first time out. What is your recommendation in testing to keep them safe?

Gittell: My recommendation is, until we have plans to go to deep space, we shouldn't be testing on anyone.

Member Guthy: We were told it takes at least five years for the results to come through. You don't think in five, six to ten years, we will be out there.

Gittell: No. It does not appear that way. It takes a very long time to build the kind of ship that will be needed for this. There are multiple tests that would need to be done besides radiation tests. All the experts I have spoken to have said there is no way we will be in deep space in the next ten years.

Member Guthy: Still, who are we going to test on?

Gittell: This is a series of 12 grants that NASA is funding to study space radio-biology. One of the other 12 grants is the development of a 3-D cell cultured tissue model. I don't completely understand it, but I do know that the tissue model is to study the effect of radiation on the human central nervous system. This is to study the exact same thing that this experiment is for. The time it's going to take for them to prepare for a flight to Mars, which is in our opinion decades, the technology will have improved to the point that we don't need animals at all to do this. We can use simulators. There already is something called matroshka and Fred, which is its American counterpart. These are human phantoms, full body human simulators that have been sent to space to measure this type of thing. The technology is evolving at a very rapid rate and by the time a Mars mission is actually on the table, the technology will be advanced to the point where we can gather all of this information from non-animal sources.

Member Mannhaupt: Can I ask for a clarification of the title of the report? The title of the report from PCRM is the Analysis of Brookhaven National Lab IACUC protocol. Is it your protocol?

Gittell: No, we received the protocol. IACUC stands for Institutional Animal Care and Use Committee. We received it through a Freedom of Information Act request that we made to the Department of Energy. It's the protocol that the IACUC reviewed.

Member Mannhaupt: So it's not Brookhaven National Lab's protocol, it's the IACUC's.

Gittell: This is the protocol that was submitted to the IACUC by Dr. Bergman at McLean Hospital. It's a confusing title. The researcher from Massachusetts submitted this protocol to Brookhaven. To answer the question from before about the monkeys; he has the monkeys already. He uses squirrel monkeys all the time for cocaine and methamphetamine behavioral tests. As far as I know, they have already been plucked out of the wild and are in his facility. In a statement he made to the media in November, he indicated that he was already beginning to train them for this experiment, pre-train them.

Member Kaplan: So are you saying to cross out Brookhaven National Lab and put in McLean Hospital?

Gittell: It's called the Brookhaven National Lab IACUC. That is the official title, but it was submitted by McLean Hospital.

Member Kaplan: So it's not Brookhaven's.

Member Henagan: It's a protocol to Brookhaven.

[Discussion over title]

Member Bush: To what extent is your objection to this experiment specifically as opposed to using animals in any context?

Gittell: Good question. As I said, there are four decades worth of space radiation research using non-human primates. They stopped in the early 90's because it wasn't advancing the safety aspects of human space travel. We object to this one because it has been made public. It is a federally-funded study. We object to any federally-funded study using animals that we can. However, we are particularly concerned with this due to the poor science involved that I mentioned earlier due to rate doses. But also about the precedent that it sets, that this type of research becomes validated again after having stopped for so many years.

Member Kaplan: So you are against animal experimentation generally, but particularly in this case.

Gittell: Yes, we are.

Member Esposito: When did you say this stopped?

Gittell: In the early 90s. I can provide you...

Member Esposito: So that's two decades.

Gittell: Yes, that's correct.

Reed: Thank you, Noah for joining us.

Gittell: Thank you.

Member Kaplan: What is the speaker's name?

Gittell: Noah Gittell. I will leave a few cards on the table.

Member Kaplan: Are you a doctor?

Gittell: No, I am an advocate. I am the Programs Coordinator for PCRM, but I work with doctors and physicians and they completed the protocol.

Member Kaplan: Your name is not on here.

Member Mannhaupt: What is your email address?

Gittell: ngittell@pcrm.org

The next community member to speak was Colleen Conroy, a concerned citizen. She read the following statement:

“I would like to thank the committee for giving me this opportunity to share my concerns regarding the NASA-funded radiation experiment on monkeys that has been proposed to take place in part at Brookhaven National Laboratory.

Humans clearly have a strong desire to explore space but the strength of our desire alone cannot justify inflicting severe and irreversible harm on as many as thirty smart, social and sensitive animals in experiments that—based on decades of previous research—have highly questionable relevance to human health.

A recent opinion piece by a neurologist with the U.S. Food and Drug Administration who opposes the NASA project stated that, “the experiments are poorly planned and a far cry from the real life conditions humans would be confronted with in space.”

While the applicability of these experiments to humans is uncertain, the harm they will cause to the animals involved is not. We should not be so starry-eyed that we ignore the suffering and pain that will inevitably be caused to the monkeys in this experiment, such as vomiting, seizures, internal bleeding, cancer, cataracts, skin disorders and psychological trauma. Squirrel monkeys in the wild live in large social groups with hundreds of members. Like humans they are social animals who live rich emotional lives and develop deep relationships with their peers. In labs, they are denied everything natural to them and suffer immensely.

Brookhaven has been responsible for incredible discoveries about the origin of the universe and other marvels that have results in Nobel prizes and other prestigious awards. It would be a shame for the facility to tarnish its reputation by participating in this inhumane, outdated and unnecessary exercise of cruelty against these animals.

In the 21st century, given everything we know about the magnificent abilities of monkeys and their capacity for suffering, and the many humane alternatives to animal testing available, a project such as this is unjustifiable. I know that I represent the views of many people who would be horrified and disappointed if this project were to go forward and take place in our community.

As a body charged with representing the interests of the community and securing the trust and confidence of the public for Brookhaven’s various activities, I ask that the Community Advisory Council please urge Dr. Aronson and other administrators not to approve this study and to distance themselves as far as possible from this ill-advised project.” Thank you.

Reed: Would you like to take some questions?

Conroy: I’d prefer not to.

Reed: Thank you then. If you’d like to, you can leave a copy of your statement for the minutes.

Conroy: Yes, thank you, that would be great.

Member Graves: I still have a question for anyone who knows the answer. A couple of references were made about these being wild animals. I just want to clarify this, are these captured from the wild or are these captive bred?

Lowenstein: I believe they are captive bred.

Member Henagan: Typically for this type of thing, they would be, rather than wild caught.

Member Graves: That's what I thought, but Noah mentioned them being plucked from the wild.

Reed: We have one other person that wanted to join us this evening. Sir.

Ian Smith: I am a Research Associate with People for the Ethical Treatment of Animals, and I would like to thank you for this opportunity to share some of our thoughts and some of our concerns regarding the current experiment regarding NASA and Harvard's Jack Bergman. For the sake of time and for the sake of the agenda, I'll pass over some of the points that have already been fairly thoroughly covered and adequately addressed and try to focus on just a couple of the pieces of information that we are concerned about that we have found misleading.

In the past, Jack Bergman has said that these planned studies do not involve pain. But this is simply not true and is at odds with common sense and the findings of nearly four decades of research as has been alluded to earlier. The effects of the irradiation will result in immense suffering and cruelty, likely including malignant tumors, loss of motor control, blindness, brain damage, premature aging, skin damage and early death. Research from Harvard indicates that approximately 90% of primates who are individually caged, as they will be in this case, exhibit induced abnormal behaviors, such as frantic cage circling, incessant pacing, self biting and self mutilation, and pulling out one's own hair. In addition to the psychological torment, these conditions have the potential to weaken the immune systems, and thereby make primates vulnerable to a variety of illnesses, as well as to exacerbate the maladies inflicted by the original exposure itself, introducing another variable into the research.

At the November 2009 Community Advisory Council meeting, Derek Lowenstein told you that monkeys used in Mr. Bergman's study will be retired at the end of the project. Again, this statement is not true. Since Jack Bergman will be given the opportunity to renew the grant for the project in 2013, NASA and BNL are not in a position to guarantee or even speculate as to how the monkeys will or will not be used in the future. The paperwork submitted to BNL by Mr. Bergman certainly does not dismiss the possibility that these monkeys will be used in future experiments. As was mentioned shortly ago, given Jack Bergman's past experiments having involved addicting monkeys to cocaine and methamphetamines, restraining them, electrically shocking them, there is no telling what his future work may entail. You may not know that the law does not prohibit any experiment, no matter how painful, trivial, or redundant, even when non-animal alternatives are available, so, the future of these monkeys, is a further concern, in addition to this experiment.

Finally, there are an increasing number of diverse voices that are speaking out against this experiment. Members of Congress recently authored a letter to NASA administrator, Charles Bolden, asking him to cancel the project and saying that it was inhumane, redundant, and will be unlikely to yield results that are applicable to humans. Additionally, tens of thousands of people from across the United States have contacted both NASA and our elected officials urging their action be taken to cancel this experiment. So, I'd like to finally reiterate Noah's point, that Brookhaven National Laboratory Community Advisory Council is in a uniquely influential position to ensure the concerns of people in this community and across the nation

don't go unanswered. So, I'd like to ask you to urge Dr. Aronson and the other Brookhaven administrators to cancel this experiment or withhold their approval. Thank you.

Reed: Thank you. Before we go on to a couple of questions, are you okay to take questions?

Smith: Yes, I'd be happy to.

Reed: Can you spell your name?

Smith: It's IAN SMITH.

Member Mannhaupt: What's your e-mail?

Smith: ians@peta.org

Member Guthy: I'd like your opinion, if you know, and then anyone else's. We have been told that they could be in pain and ill and whatever. Can I ask how these animals are treated if they do get sick? Are they just put to sleep, do they try surgery, do they try to cure them in any way? What happens to these animals? Does anybody know?

Smith: I think the most reasonable suspicion would be that they be put to sleep, but that's speculation on my part.

Reed: It looks like we don't have an answer in our audience.

Member Guthy: In any case, they are not left to suffer? Something would be done to at least alleviate their suffering?

Member Esposito: We don't know.

Smith: Unless it's important to the experiment that the symptoms be....

Reed: That is a question we ought to put to the Brookhaven staff to get an answer for you, because there is nobody in the room that can answer it tonight. It is an important question.

ACTION ITEM: Find out what happens to the monkeys if they get sick.

Member Mannhaupt: I can see where Helga is going but we were told that they'd be dosed for a week and then another week resting and then go back so I don't know what that entails, but I wanted to ask Jeanne, with these three speakers tonight. Can we make sure we have copies of their information that they brought to us tonight when we get our next packets to review? Frankly, I don't know about the other members, but I think we need more information to really make any recommendations to Brookhaven National Laboratory because we don't have enough background, or I don't have enough background information to make a substantive recommendation and I want to say, I know how hard it is to go before a group and have an opinion that is different and I appreciate the time that you three have taken and the information that you brought tonight to the CAC.

Smith: What I will do is leave a copy of the letter that PETA has sent to Dr. Aronson, which captures my remarks and probably elaborates on them a fair amount. So, that will be available to everyone.

Member Giacomaro: You mentioned in your speech non-animal experimentation. Can you describe what you mean by that, how do you experiment..?

Member Esposito: I think he said non-animal alternatives.

Smith: I'm not sure. I know that Noah from PCRM mentioned several non-animal alternatives that are currently being developed or available. In addition to the simulators and technologies that Noah referred to, another option that would be available is that NASA has a lot of contacts who have been to space. Studying the results on those individuals would be a worthwhile endeavor as well. I think the technologies that Noah referred to are detailed in his materials.

Member Garber: You mentioned earlier that Jack Bergman's research with these monkeys is on drug addiction. Are there similar type protests to the experiments on these animals? Or is this protest radiation focused?

Smith: I know that PETA, as an organization, objects to forcibly addicting animals to dangerous drugs if that's your question. Yes. When you say these protests, I know there has been a lot more public attention, media attention, possibly because of NASA's involvement, which people generally associate with cutting edge science and moon landings and not with the torment of animals. I would find both projects in Jack Bergman's history to be troubling.

Member Shea: I would like to recommend that we have a list of some of these studies and alternative methods that can be used to study the effects of radiation. So that we have something concrete to compare this to.

Reed: Can you gentlemen send those in, would that be okay?

Smith: Yes, I think so.

Member Shea: I think it's very heroic to come up here and present alternatives. I appreciate it.

Reed: So you can use your contact here to send that information in and it will get to the group.

ACTION ITEM: Provide list of studies and alternative methods used to study the effects of radiation.

Member Mannhaupt : How do we know Jack Bergman's 30 monkeys that are already being used are not going to be the ones sent to BNL? I want to know that it's an absolute because what good are cocaine addicted monkeys being irradiated as spacemen, when astronauts are.. (inaudible)

Smith: I suspect they are a different set of monkeys, but that's just a suspicion of mine.

Member Mannhaupt: So it won't be the monkeys that he's using now. I thought I heard before that he already has the monkeys that are coming to BNL.

Member Esposito: That's what Noah said, but I don't think he was implying that it was the cocaine monkeys.

Gittell: The monkeys he is using, he claims, are experimentally naïve. He has many squirrel monkeys at his institution. He uses some of them for the cocaine and methamphetamine studies. These have not been used in any other study according to him.

Member Mannhaupt: So the ones he purports to send, if this is a go, are 30 clean monkeys.

Reed: We'd like to express our appreciation to Ian and the others. As an organization, we thank members of other organizations and of the community for joining us this evening to present us with their views. This is part of the CAC's process of getting multiple views. So thank you to the three of you.

Member Kaplan: We are supposed to provide advice to the director so I am asking, are you looking to us for anything on this particular issue?

Dr. Aronson, BNL Director: I actually got a lot already from these several colloquies that you've had with Steve and the speakers, but if CAC wants to provide us with input, recommendations or views on this, it will be a very valuable addition to our decision-making process. So the answer is of course.

Member Mannhaupt: I just need more information

Member Esposito: This could be something we put on next month's agenda and we will hopefully have obtained the other information and the statements. We could certainly look at the research on our own from the doctor at the root of this.

Member Henagan: Is there any possibility that we could get somebody from McLean involved with the research proposal to present because they are going to be the ones with most of the answers to the questions that we have. We only get little snippets that Brookhaven has with regard to the protocol that is going to be executed here. The external protocols would be worthwhile questioning as well.

Reed: Who could take that on, the request to get somebody from the research operation?

Aronson: We will certainly look into that.

ACTION ITEM: Request a presentation from someone from McLean.

Member Blumer: If that happens, that somebody comes from McLean, could there be a forum where CAC discusses this, rather than this back and forth when they do a presentation, so that as the discussion goes, there may be a couple of experts to field whatever is going back and forth.

Reed: That's a great segue. It sounds like you are interested in pursuing the subject as a group further and that you'd like to do that at the next meeting. So you are going to get some additional information. We are going to see about bringing someone else in from the research side so you can ask questions of that person. Would you then like to have a discussion amongst yourselves to determine if you want to make a recommendation or provide individual input into the Laboratory on this further?

CAC indicated they would.

Reed: Ok, so we can do that.

Member Chaudhry: Was McLean Hospital the only party to submit a proposal? If so, why are there no other competitors?

Vigdor: NASA reviews proposals that are submitted. Bergman, as has been said, has a lot of experience with squirrel monkeys and with measurements of their neurobehavioral responses. He doesn't have particular experience himself in radiation exposures, but he has collaborated

with people who do. NASA doesn't go out and select people to do experiments; they just respond to submitted proposals. He submitted a proposal and they are required to evaluate it.

Member Chaudhry: So NASA went with a single source.

Vigdor: The panel that judged this proposal for NASA, judged a total of 15 proposals dealing with research associated with central nervous system affects. I don't know the details of the other proposals, I just know this one was submitted and approved.

Reed: I'd like to hold substantive discussion for next month. Are there any comments or questions about process?

Member Graves: I need additional information. I want to clarify something that was mentioned. Is deep space travel in the offing or not? Can we clarify that and if there was a request for proposals for the Mars mission?

Member Henagan: It was in the news, I can't remember if it was this morning or yesterday, but it was in the news that the White House issued a directive for NASA to do a proposal.

Member Esposito: I find that hard to believe, they have no money for anything and now we are going to Mars.

Reed: Can you look it up again and get the information?

Member Henagan: Yes, I will try.

Member Mannhaupt: Let's say this doesn't happen, no squirrel monkeys, none of this stuff with NASA, I would like to know economically, and financially how that will affect Brookhaven National Lab.

Reed: We can get that answer from Brookhaven. What Jean is looking for is what kind of..

Member Esposito: I am looking for a compromise, but I want to know what happens to the money.

Reed: What's the consequence on Brookhaven's budget if this goes away?

ACTION ITEM: Find out what the consequence is to BNL's budget if the experiment is not done here.

Member Kaplan: Is it possible to have either a representative from NASA here or available on the phone, as we have done in the past, to answer some questions.

Member Esposito: Maybe somebody who reviewed the 15 proposals and why this one was so great.

Reed: So the question is to get some input from NASA. Okay, thank you, we will close the discussion now.

ACTION ITEM: Request someone from NASA be available to answer questions.

6. Agenda Setting

Jeanne D'Ascoli, BNL liaison to the CAC, said in addition to the discussion on this topic, next month there will be an update on groundwater.

7. Energy Conservation and Sustainability Efforts at Brookhaven National Laboratory, Mark Toscano, Energy Manager

Mark Toscano spoke to the CAC about Energy Conservation and Sustainability efforts at BNL. He spoke about energy use and explained DOE requirements for reducing energy consumption and improving energy efficiency, as well as increasing recycling efforts. He explained DOE's energy goals and said they want to reduce energy consumption by 30% and water consumption by 16% at all DOE facilities. He said BNL's goals are to continue to meet or exceed energy reduction goals. Brookhaven is currently developing a comprehensive, Lab-wide sustainability program. He spoke about conservation, renewable energy, water reduction, transportation, and the sustainable design of the new facilities.

Member Esposito asked if the Lab can use smart grid.

Toscano said yes.

Member Blumer asked if any portion of the BP Solar project going to be used at Brookhaven, or will it all be sent out.

Toscano said a small portion will go to BNL.

Member Blumer asked about the EA for the BP Solar Project. She said the CAC has asked a lot of questions and DOE has not given many answers. Open space is being sacrificed. She said she feels that Lab could do more for the money. She would like the CAC to consider why the Lab is not looking at other arrangements.

Toscano said this is a contract between BP Solar and LIPA. He gave a brief outline of the steps that have taken place. LIPA issued an RFP for this project. They also have residential programs. This is a small piece in the grand scheme of things. We have to start somewhere, solar power is expensive.

Member Guthy said the new buildings at BNL have a lot of glass. She asked if they are energy efficient.

Toscano said it was very efficient glass. The buildings require outside air and that requires a certain amount of energy, so it's a compromise.

Member Peskin asked why there is no money going into renovating the older buildings onsite.

Toscano said the Lab is in the process of major renovations. Things have to be prioritized; we can't do everything at the same time.

Member Garber asked why geothermal hasn't been part of the renovation program.

Toscano said they cannot justify geothermal on an economic basis.

Member Talbot said BNL's goals are to create innovative partnerships. He asked if the Lab has a relationship with the Town of Brookhaven Waste Management Program.

Toscano said the Lab works with them on different things in terms of recycling.

Mike Bebon, Deputy Director for Operations, said the Lab has a program with the federal government for recycling electronic devices.

Member Shea asked if the CAC could have a presentation on wood-derived gas in the future.

Toscano said we could do that at a future meeting.

Member Anker asked about BNL's relationship with local town government. She asked if there is a more efficient way to do home energy audits. BNL should be more involved in giving people direction and promoting green homes.

Member Blumer said she feels BNL needs to do something more intelligent than BP Solar. She said the Lab is in a good position to negotiate the terms. Perhaps the CAC can ask BNL not to sign the contract until it is worked out. Put the money where it will be used best. She would like an analysis of the loss of energy over the transmission lines.

Toscano said the point is taken. A lot of thought and effort has gone into this project. The benefit is this is an opportunity.

Member Blumer said she does not feel her questions have been answered. She requested this be put on the agenda. She would like more information.

Member Esposito said this topic has been on the agenda many times. What else can we discuss? This is not our money. BP is paying for it.

Member Blumer asked if the Lab has reviewed the Bloom energy fuel cells that are being used by FedEx in California.

Toscano said DOE has been pushing for fuel cells and they are being looked at.

Member Anker asked if BP will be using U.S. manufacturers.

Toscano said BP has told the Lab that an overwhelming number of panels will be manufactured in the United States.

Reed told Member Blumer that in order to put an item on the agenda it is necessary to have quorum and have two thirds of the membership in agreement. Would you like to proceed with your request?

Member Blumer said yes.

Reed asked the CAC if they would like to put Member Blumer's item on the agenda. He said 12 members were needed to vote for this in order for it to go on the agenda.

A vote was taken; 5 members voted to place the item on the agenda. The request failed.

George Proios, former member, asked if an energy audit had been completed.

Toscano said the Lab has been audited many times over the years.

The meeting adjourned at 9:45 p.m.

				Jan	Feb (canceled)	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
P = Present	2010	Affiliation	First Name	Last Name											
ABCO	(Garber added on 4/10/02)	Member	Don	Garber	P		P								
ABCO		Alternate													
Brookhaven Retired Employees Association	(Peskin replaced Campbell 09/09)	Member	Arnie	Peskin			P								
Brookhaven Retired Employees Association	(L. Jacobson new alternate as of 4/99)(A. Peskin 5/04)(Franz 12/09)	Alternate	Eena-Mai	Franz											
CHEC (Community Health & Environment Coalition)	(added 10/04)	Member	Sarah	Anker	P		P								
	(added 12/08) (R. Andrejkovics removed 9/09)	Alternate													
Citizens Campaign for the Environment		Member	Adrienne	Esposito	P		P								
Citizens Campaign for the Environment	(Ottney added 4/02-taken off 1/05 Mahoney put on)(7/06 add Kasey Jacobs)(K. Jacobs off 1/08)	Alternate													
Colonial Woods Whispering Pines	(added 06/09)	Member	Christine	Birben	P		P								
Colonial Woods Whispering Pines	(added 09/09)	Alternate	Joan	Milner											
E. Yaphank Civic Association		Member	Michael	Giacomaro	P		P								
E. Yaphank Civic Association	(J. Minasi new alternate as of 3/99) (M. Triber 11/05) (Munson 6/06) (Feinman 2/09)	Alternate	Bob	Feinman	P		P								
Educator	(changed 7/2006)	Member	Adam	Martin											
Educator	(B. Martin - 9/01)	Alternate	Bruce	Martin											
Educator	(A. Martin new alternate 2/00) (Adam to college 8/01)(add. alternate 9/02) (changed 7/2006)(Bush 5/09)	Alternate	Greg	Bush			P								
Fire Rescue and Emergency Services		Member	Joe	Williams											
Fire Rescue and Emergency Services		Alternate	Don	Lynch											
Fire Rescue and Emergency Services		Alternate	James	McLoughlin											
Friends of Brookhaven	(E.Kaplan changed to become member 7/1/01)	Member	Ed	Kaplan			P								
Friends of Brookhaven	(E.Kaplan changed to become member 7/1/01)(Schwartz added 11/18/02)	Alternate	Steve	Schwartz											
Health Care		Member	Jane	Corrarino											
Health Care		Alternate													
Huntington Breast Cancer Coalition		Member	Mary Joan	Shea			P								
Huntington Breast Cancer Coalition		Alternate	Scott	Carlin											
Intl. Brotherhood of Electrical Workers/Local 2230	(S.Krsnak replaced M. Walker 1/11/07)	Member	Scott	Krsnak											
IBEW/Local 2230		Alternate	Philip	Pizzo											

				Jan	Feb (cancelled)	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
P = Present	2010	Affiliation	First Name	Last Name											
		L.I. Pine Barrens Society	Member	Richard	Amper	P									
		L.I. Pine Barrens Society (added P. Loris 6/05)(Alayeva off 6/08) (Itriyeva 02/09) (Motschenbacher 6/09)	Alternate	Beth	Motschenbacher		P								
		L.I. Pine Barrens Society	Alternate	Susie	Husted										
		L.I. Progressive Coalition	Member	David	Sprintzen	P									
		L.I. Progressive Coalition	Alternate	None	None										
		Lake Panamoka Civic Association (Biss as of 4/02)	Member	Rita	Biss	P	P								
		Lake Panamoka Civic Association (Rita Biss new alternate as of 3/99) (Gibbons off 1/10)	Alternate												
		Long Island Association (Groneman replace 10/05)	Member												
		Long Island Association	Alternate	William	Evanzia										
		Longwood Alliance	Member	Tom	Talbot	P	P								
		Longwood Alliance	Alternate	Kevin	Crowley										
		Longwood Central School Dist. (switched 11/02)(Castro replaced Henigin 6/09)	Member	Maria	Castro	P	P								
		Longwood Central School Dist.	Alternate	Allan	Gerstenlauer										
		NEAR	Member	Jean	Mannhaupt		P								
		NEAR (prospect taken off ¾) (Blumer added 10/04)	Alternate	Karen	Blumer		P								
		NSLS User	Member	Jean	Jordan-Sweet	P									
		NSLS User	Alternate	Peter	Stephens										
		Ridge Civic Association	Member	Pat	Henagan	P	P								
		Science & Technology (added 1/13/05)	Member	Iqbal	Chaudhry		P								
		Town of Brookhaven (Graves made member 6/06)	Member	Anthony	Graves	P	P								
		Town of Brookhaven	Alternate	None	None										
		Town of Brookhaven, Senior Citizens	Member	James	Heil	P	P								
		Town of Brookhaven, Senior Citizens (open slot as of 4/99)	Alternate												
		Town of Riverhead	Member												
		Town of Riverhead (K. Skinner alternate as of 4/99)	Alternate	Kim	Skinner										
		Wading River Civic Association	Member	Helga	Guthy	P	P								
		Wading River Civic Association	Alternate	Sid	Bail										