

**Panel on Public Affairs Meeting**  
**October 2<sup>nd</sup>, 2009**  
**529 14<sup>th</sup> Street, NW, Suite 1050, Washington DC**

**Members present:**

D. Moore, M. Klein, R. Socolow

W. Barletta (via phone), J. Browne, K. Budil, P. Coleman, G. Crabtree, J. Davis, J. Drake, H. Gao, F. Houle, R. Jaffe, T. Kaarsberg, L. Krauss (via phone), A. Sessoms, P. Zimmerman

**Advisors/Staff present:**

T. Johnson, K. Kirby, J. Russo, F. Slakey, G. Sprouse (via phone)

**Members Absent:**

B. Barish, D. Engel, W. Jeffrey, V. Narayanamurti, J. Onuchic

<b>Call to Order</b>
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**D. Moore called the meeting to order at 8:15 AM.**

<b>Welcome, Introductions, &amp; Approval of Minutes</b>
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All members introduced themselves. D. Moore asked for comments on the June minutes. Members were asked to review minor edits provided by T. Kaarsberg. A motion to approve the minutes, with edits, was requested.

**Action:** M. Klein moved to approve the minutes of the June 5<sup>th</sup>, 2009 POPA meeting. Motion was seconded by J. Browne.

*The motion to approve the minutes passed unanimously.*

<b>National Security Subcommittee</b>
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**Nuclear Downsizing Study Update**

An update was provided by J. Browne. The study committee's last workshop was held June 30<sup>th</sup> – July 1<sup>st</sup>. The draft report is in the final stages of production. The study report will reach POPA for a vote at the February 2010 meeting following review by the study committee, external review, subcommittee review, and then POPA review. The draft will be made available to POPA members for review prior to the next meeting. Following approval by POPA, the report will go to the Executive Board for approval. The study committee would like to release the final report in February, so that it is available for discussion amongst staffers, committees, etc. prior to Congressional hearings in March. Currently the draft report contains nine substantive recommendations.

**Commentary:** It was suggested that the final product be elevated to an APS report, as it may hold more weight when released and the topic itself is extremely important. There was concern that such a move would hinder release of the report at the most opportune

time. It was agreed that the final product should remain a POPA report. T. Kaarsberg asked whether the results of the report are likely to impact our views toward Iran. J. Browne said that how we deal with Iran and North Korea will be a continuing issue, but some of the items covered in the report are actions that must be taken independent of the latest crises. There will always be a new country posing new threats and if we are not prepared to deal with these, the questions will grow bigger for the next Administration and the next Congress. Are we doing the right thing by reducing the stockpile and, if so, how can we verify that? How *well* can we verify that? P. Zimmerman said he didn't think there would be much debate about the report's recommendations. J. Browne provided a glimpse of the report's suggestions. One recommendation is for the U.S. to declassify its total number of weapons. The motivation for taking this action is to bring other countries to the table to share their numbers. Unless our country leads the way, it will be difficult convincing any other country to seriously release their information. J. Drake questioned the political consequences of releasing the number of weapons. J. Browne said the current numbers are pretty well known. What is publicly known is pretty accurate. Another recommendation is to establish centers in the U.S. and in other countries (Russia, China) where scientists and engineers will compare their verification technology to see how well it will work in a real situation. In so doing, there would be a measure of confidence built between the participating nations.

## Energy & Environment Subcommittee

### CO<sub>2</sub> Extraction Study Summary

T. Kaarsberg introduced R. Socolow, who provided an update. The Study Committee has completed two meetings – one in March at Princeton, the other in August at Berkeley. Bill Brinkman was the co-chair at the Princeton meeting, but had to step down when he was appointed as Director of the Office of Science at the DOE. Arun Majumdar was the co-chair at the Berkeley meeting; he is now awaiting confirmation hearings for the position of Director of ARPA-E at the DOE. R. Socolow is considering whether a third co-chair will be necessary. He explained that the majority of the study's final report will be a tutorial. The two framing questions of the report ask the reader to consider how important this subject is today (what are the messages for today's policymakers?) and whether there is a case for an R&D program. The chapters of the report exist in draft format at this point and an editorial committee is rewriting for consistency. Chapter 2 is being tested in a class at Stanford. The final report will be approximately 75 pages long. A few names have been suggested for external reviewers (there will be three). The goal is to have a final draft for POPA to review and discuss at the February meeting, but the schedule is tight.

**Commentary:** R. Socolow said that the Study Committee was not in agreement, at the second meeting, as to whether the case for CO<sub>2</sub> extraction was promising. F. Slakey indicated that it seemed the consensus at that meeting was that funds should not be funneled into R&D. R. Socolow offered that the Committee's opinion has evolved since then. The opportunity for dual work on certain projects is being considered. There are already R&D programs in place for other types of capture (post-combustion) and there may be opportunities for dual work that include continued research on CO<sub>2</sub> direct air capture.

M. Klein suggested that there could be some modularity on the production of the final report. Perhaps an education module, created by APS, could be part of the roll-out. M. Lubell suggested producing several different documents for different audiences. R. Socolow discussed the different audiences the Committee has considered: a shorter (15-25 page) report for the Hill/Congress; a more detailed report for teachers, researchers, etc.

### **Energy Grid Study Update**

G. Crabtree provided an update on the Energy Grid Study. The study scope has been tightened to include renewables only. The focus of the final report will be on how to put renewable energy on the grid and what issues will be encountered in so doing. The report will speak about the “smart grid” to the extent that it is necessary. He reviewed the list of study committee participants (11 people, plus the Chair), which includes experts with a wide variety of perspectives on this issue. The first workshop will be held next week and he shared the proposed agenda for the meeting. There will be a guest speaker from Spain at the first workshop to provide an international perspective. G. Crabtree said that the Spanish grid provides a good representation of the issues that the U.S. will face. A second workshop is being planned for December. The aim is to finish the report in January or February of 2010.

**Commentary:** R. Socolow asked G. Crabtree about the national security component and whether the study will cover this issue. P. Zimmerman added that the committee will need to consider EMP attacks, auroral storms, etc. G. Crabtree said that the committee will consider these issues. J. Drake wondered if the security issues should be an “add-on” to the report, since he doesn’t feel that this one report can deal with all the issues that will present themselves. G. Crabtree said that the intent is to focus on renewable resources in this report; the other issues that we should look into, moving forward, will be well framed. He also mentioned that they will be considering demand side storage. J. Drake spoke about offshore wind energy on the coast of North Carolina and suggested the committee get feedback from the companies involved in investigating this possible resource. He also mentioned that geothermal resources should be included in the study since these could be used to resolve intermittency issues experienced with other types of renewable resources (solar, wind). R. Socolow cautioned about broadening the scope. J. Drake insisted that the discussion on intermittency be included, as we want to make sure to present a long-term vision of how renewable energy resources can be uploaded onto our current electric grid.

### **Energy Critical Elements Proposal & Vote**

B. Jaffe provided an overview. When this idea was first proposed, several societies had shown interest in participating in the project and providing study funding. Unfortunately, several were not able to make budget contributions, but the MRS has committed financial resources. B. Jaffe began to look for additional funding and he found it at MIT’s Energy Initiative (MITEI). The idea is to work with MITEI for the first workshop (they will pay for expenses related to Workshop I) and then APS will part ways with them. The second wave of the study will be the policy phase, which will be funded by APS and MRS. The appearance of rare elements in public discussion has been growing because elements like neodymium are used in hybrid cars and in wind turbines. China currently produces 95% of the neodymium available for use in production of new energy technologies. They have shut down the export of this rare element and will now begin to create the products that require neodymium and export those at a higher value.

Currently, there doesn't seem to be a coherent project within the U.S. government to track these scarce materials. R. Jaffe indicated that he'd like to move forward with this report as a few case studies that look at the main questions: economic, political and environmental ramifications. After reviewing case studies, we will determine whether there are policy recommendations to be made. It will be important to have expertise from areas outside of physics and R. Jaffe asked for recommendations from POPA.

**Commentary:** R. Socolow asked whether the study committee will look at the substitutional elements in depth. Could we extend the scope of the study to include substitutional physics? That's a unique value we could add to a review of this issue. M. Lubell disagreed. If we make statements about substituting one element for another, unless we have an iron-clad case for the substitutional element, we are sure to step on the toes of people who have a vested interest in the initial element. We don't have the resources to accomplish this within the confines of this study. R. Jaffe said he thinks it will be much more effective if we carry out a study that really considers the political issues. J. Drake indicated that we should probably not have more than two people from any one institution on the committee. Members were asked to provide input on possible committee members over lunch.

**Action:** R. Socolow moved to approve the study proposal, as presented. Motion was seconded by P. Zimmerman.

*The motion to approve the proposal for a study on energy critical elements passed unanimously.*

### **Update on APS Open Access Statement**

M. Lubell provided an update. Gene Sprouse joined via teleconference. This issue is driven by the library association and advocates for making medical research results, funded by the government, available to citizens - free of charge - as soon as they are published. These two groups pushed for the inclusion of a requirement in an appropriations bill for the National Institutes of Health that anyone receiving funding from NIH that has published as a result must post their accepted publications in an NIH archive. This has major implications on whether libraries will continue to maintain subscriptions to non-governmental archives. APS doesn't have a public statement on the issue of open access. If we don't have a public statement, we cannot lobby on the issue if the need arises. The Society's concern is that this may jeopardize our subscription business model. Copies of a possible statement were passed around for review. The statement reads:

*"The American Physical Society's publication policies will be aligned with the principles of open access to the maximum extent that still allows the Society to maintain high quality journals, secure archiving, and long-term financial stability."*

This is in line with the Society's current practices. We allow authors to post the final version of their article on their own website and on their institution's website immediately upon publication. It turns out that not every author chooses to do this, and so libraries need to purchase subscriptions to journals to make sure that they provide access to all articles that are

published. If there is a subject repository (such as the NIH repository) then a more certain way to find the literature is created and there is less need for the libraries to subscribe to the journals that would also print these articles. We view these subject repositories as a threat to the Society's business model.

**Commentary:** D. Moore indicated that the floor was open for debate. R. Socolow is against POPA being involved in this decision. M. Lubell indicated that scientific publishing is a public policy matter and POPA must be involved. J. Drake said he thinks the statement is vague and doesn't indicate what the APS will lobby on. P. Zimmerman agreed. G. Sprouse said there are forms of open access that wouldn't prove detrimental to our journals and other forms that would. This statement presents the Society's prevailing position that we would like to see open access as long as it doesn't damage us. A. Sessoms said that if we don't have a statement we can't comment. If APS doesn't comment, Congress will assume that we are disinterested and that is a mistake. G. Crabtree said we should weigh what is good for the science community against what is good for the APS. We shouldn't vote on what's best for the APS if it is not in line with what's good for the science community as a whole. M. Lubell and G. Sprouse restated that we support the principles of open access. The statement was written broadly because we don't know exactly how we will position ourselves in the future. We need to put forth a public statement so that we can be in a position to comment on the issue when approached for remarks.

**Action:** P. Coleman moved to approve the open access statement, as presented.

J. Drake made a motion to amend the statement to read:

*“The APS will support the principle of open access to the maximum extent that allows the Society to maintain peer-reviewed, high quality journals, secure archiving, and its long-term financial stability.”*

The motion to amend the statement was seconded by P. Zimmerman.

R. Socolow made a motion to amend the statement further, to read:

*“The APS supports the principle of open access to the maximum extent that allows peer-reviewed, high quality journals, secure archiving, and long-term financial stability of the scientific enterprise.”*

This was not considered a friendly amendment by J. Drake.  
The motion to amend the amendment was seconded by T. Kaarsberg.  
Discussion ensued.

M. Lubell suggested a substitute amendment to have the statement read:

*“The APS supports the principle of open access to the maximum extent that allows the Society to maintain peer-reviewed, high quality journals, secure archiving, and its long-term financial stability to the benefit of the scientific enterprise.”*

This was considered a friendly amendment by R. Socolow and T. Kaarsberg.

J. Drake and P. Zimmerman accepted the revision as well.

The motion was put to a vote.

*The motion to approve the open access statement, as revised, was passed unanimously.*

### National Research Policy Subcommittee

W. Barletta joined via teleconference to provide an overview of what his subcommittee is working on. In continuing with the topic he brought to the table at the last POPA meeting (exploring ways to reverse the general decline of the physical sciences infrastructure at major universities) they have been searching for a topic, reduced in scope, that will not cause friction between the national laboratories and the universities. The intent is not to cause heat and friction but rather to find a way to provide the universities with money for the work they do best. He asked POPA for help in finding a topic for such a report, or people he could speak with to determine the best course of action.

**Commentary:** It was suggested that the subcommittee reach out to Ray Orbach for his feedback on the issue and perhaps have him come speak to POPA at an upcoming meeting. J. Drake cautioned that the subcommittee should have a clear end point in mind when formulating the idea for their study. M. Lubell said that Congressional staff, as well as the DOE, should be approached for discussion.

**Action:** W. Barletta, G. Crabtree and V. Narayanamurti will meet via teleconference and create a specific proposal to share with POPA at the next meeting.

### Washington Update

The House & Senate came together on the DOE appropriations bill and the increase this year for the Office of Science is pretty small, but this was expected because last year's increase was very large. M. Lubell commented that, overall, things look quite good. Looking forward to 2011, we anticipate a very difficult budget climate. However, the Administration says it intends to keep science funding on its 10-year doubling track. M. Lubell mentioned that there seems to be a lack of communication between the DOE and Congress (as evidenced by the “energy hub” request). Congress complains often that the DOE does not explain itself well when suggesting projects. In addition, DOE has been prohibiting discussions between registered lobbyists and Department staff. M. Lubell and K. Kirby looked into whether the Administration has a policy that is

creating this barrier and found that no such policy exists. A letter was written asking why the DOE was proceeding in such a fashion when there is no policy that would bar a lobbyist from speaking with Department staff. There has been no response and there is no legislative affairs person in place at DOE to speak with, at present.

**Commentary:** G. Crabtree asked what the outlook was for the energy hub idea. M. Lubell indicated that The House approved one hub, the Senate approved two hubs. In conference, there are three approved. Two will be in EERE, one in Nuclear. M. Lubell commented that, had Steve Chu made the case to Congress, the outcome probably would have been different. The people that did make the case for these hubs did not articulate the idea well. R. Socolow asked about ARPA-E. M. Lubell indicated that this was authorized in the America COMPETES Act. It isn't clear how ARPA-E is going to function. Some say it should tackle short-term projects and move them into the marketplace. Others say it should function like a venture capital organization and work on mid-term projects. Until a director is named, we aren't going to know what ARPA-E will function as. F. Slakey said that if support continues for its existence, it will probably remain. Gordon and Pelosi both support it.

F. Slakey made mention of the Comprehensive Test Ban Treaty (CTBT) and how APS statements have long-lived value. CTBT was first reviewed 10 years ago and POPA created a public statement on the issue. We are working on it again.

#### **Next Meeting**

F. Slakey indicated that, every 5 years, POPA is supposed to take a look at the list of APS statements and determine whether any should be removed. An ad-hoc committee should be tasked with this.

**Action:** P. Zimmerman and T. Kaarsberg will review all the statements and determine whether any should be removed at this time.

#### **Next Meeting**

The next POPA meeting will be held on **Friday, February 5, 2010.**

#### **Adjournment**

**Action:** A. Sessoms moved to adjourn the meeting. Motion was seconded by G. Crabtree.

*The motion to adjourn the meeting passed unanimously.*