

**Panel on Public Affairs Meeting**  
**February 6<sup>th</sup>, 2009**  
**529 14<sup>th</sup> Street, NW, Suite 1050, Washington DC**

**Members present:**

D. Moore (via phone), R. Socolow, V. Narayanamurti, M. Klein  
B. Barish, W. Barletta, P. Coleman, G. Crabtree, J. Davis, J. Drake, H. Gao, F. Houle, , R. Jaffe,  
T. Kaarsberg, L. Krauss, J. Onuchic, A. Sessoms, P. Zimmerman

**Advisors/Staff present:**

J. Franz, T. Johnson, K. Larsen, J. Lieberman, J. Russo, F. Slakey  
C. Murray, G. Sprouse (via videoconference)  
W. Jeffrey (via teleconference)

**Members Absent:**

J. Browne & K. Budil (both joined via teleconference for parts of the meeting), D. Engel

**Call to Order**

**M. Klein called the meeting to order at 8:15 AM.**

**Welcome, Introductions, & Approval of Minutes**

All members were asked to introduce themselves. M. Klein asked for comments on the October minutes. A motion to approve the minutes, as presented, was requested.

**Action:** J. Davis moved to approve the minutes of the October 3<sup>rd</sup>, 2008 POPA meeting. Motion was seconded by P. Coleman.

*The motion to approve the minutes passed unanimously.*

**Purpose and Activities of POPA**

F. Slakey opened by providing a short review of the Panel's purpose. In a sentence, POPA addresses those issues where physics impacts society. There are two activities that dominate POPA's time: studies and statements. Statements fall under five topical areas: Education, Ethics & Values, Human Rights, Internal Policy, and External Policy. It is POPA's responsibility to draft statements on relevant topics, and to review statements that have been drafted by other committees within APS, prior to sending them along to the Executive Board and Council for approval. Studies, and their resultant reports, are the other major responsibility. POPA reports are defined by a formal budget, a panel of experts, a timeline of one year or less for completion and, for those reports with relevance to public policy, timing to match the Congressional calendar to achieve maximum impact. Other duties include drafting response letters under the POPA Chair's name (with the support of POPA), and responding to concerns voiced by the Society's membership.

**Commentary:** R. Socolow asked F. Slakey to elaborate on the differences between the “original” POPA study concept versus the newer approach that has been developed and used over the past few years. F. Slakey indicated that the addition of (1) a formal budget and (2) a concentrated effort to affect policy in relation to a study’s findings were the main differences. R. Socolow suggested that the codification of what constitutes a POPA report makes it more difficult to pursue one. Having to confine a study to topics specific to Congress is limiting. He thinks POPA should support studies that won’t have Congressional impact. M. Lubell spoke about why the protocol for reports has changed. Congress is more involved in science issues today than it ever has been in the past. APS needs to weigh in and provide advice on topics, or Congress will move ahead without our input. In addition, information is now broadly disseminated via the internet in a way it wasn’t 10-15 years ago. Anything APS delivers to the public has to be thoroughly vetted for accuracy prior to release. The only limits on how many reports POPA can release annually are the staff’s time and people’s willingness to participate in studies. M. Klein reiterated that if any POPA member has an idea and wants to propose a study, it should be brought up so that the Steering Committee can decide whether to introduce it as a discussion topic at the next scheduled meeting.

### **Subcommittee & Membership Business**

New members were asked to select subcommittees they would like to participate on. See Addendum A for the list of 2009 Subcommittee Membership.

**Commentary:** W. Barletta suggested the need for a POPA Ethics Subcommittee that included more than just the POPA Chair Line. J. Franz explained that the POPA Chair Line is a standing committee to handle confidential ethics issues that are brought to APS. POPA could easily form an additional committee that would handle broad ethics issues..

### **Proposed Study: Update & Vote**

#### **Verification Study**

M. Klein introduced J. Browne. J. Browne indicated that the study being proposed today is born of the Nuclear Weapons Policy Study that APS produced in conjunction with AAAS and CSIS last year. It appears very likely that there is a major opportunity for new arms control discussions. The POPA National Security Subcommittee believes there is a need for the physics community to address the issue of nuclear verification and to update the new administration’s view on the quality of current verification technology to support arms control negotiations. The study will consider what levels of certainties are needed for countries to move forward with approving treaties up for review (ex. START, the Nuclear Non-proliferation Treaty, etc.) J. Davis will chair the study, assuming approval. A list of volunteers, who are all willing to serve on the study committee, has been developed. The plan is to have a few workshops and generate a report by Fall ’09. The scope of the study will focus on the main issues that will help guide arms control negotiations surfacing within the next year. The report will be unclassified. A budget of \$25K will be needed to proceed. The National Security Subcommittee is looking for approval from POPA to move forward.

**Commentary:** A. Sessoms indicated that he is concerned about involving the international community. J. Browne suggested vetting the study at the international level. A. Sessoms disagreed and advocated for having them involved in the process. J. Browne agreed that having international involvement would increase the credibility of the study, but displayed concern regarding the constraints of limited resources. J. Drake suggested having a representative from the international community provide a briefing to the study committee, as opposed to being involved as a member. It was agreed that this would be helpful, although consideration must still be taken in order to stay within the approved budget.

**Action:** L. Krauss made a motion to approve the study as proposed. Motion was seconded by P. Zimmerman.

*The motion passed unanimously.*

## **Current Study: Update**

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

J. Drake began by discussing some of the ideas that are being formulated within the Energy & Environment Subcommittee. He indicated that they have agreed to delay the Energy Grid Study, if approved today, as funding from POPA would not be available until 2010. The CO<sub>2</sub> Extraction Study will move forward first, as it has already been approved.

R. Socolow, Co-chair of the CO<sub>2</sub> Extraction Study, indicated that because POPA had provided \$25K in seed money for this project he was able to raise \$200K from other sources. The Dreyfus Foundation is funding \$40K; the National Commission on Energy Policy, \$100K; a private philanthropist, Jerry Lenfest, will provide up to \$175K if we need it; and a relationship with DOE is being established as a future funding source. Bill Brinkman will Co-Chair along with R. Socolow and the committee will be 11 members in total, including: Koonin, Pfeffer, Siirola, Silbey, Majumdar, Lewis, Wilcox, Socolow, Kaarsberg, Brinkman, and Blackstock. F. Slakey will be sitting in on the meetings. The first meeting is scheduled for March 23-25, at Princeton. Keith, Laackner, Eisenberger, and Aynes will be presenting at the first meeting. R. Socolow said that the scope of the study will be discussed at the first meeting and he anticipates needing help with the public interface.

**Commentary:** T. Johnson said that the final report should appeal to reporters who don't have a science background, as well as those who do, because there are very few science reporters employed these days. M. Lubell indicated that any contract we make with the DOE should indicate that there might be findings in the final report that the DOE doesn't like. W. Barletta said that, in listening to R. Socolow, it seems his scope for the project keeps growing. Perhaps the normal POPA Report format isn't the vehicle for this endeavor. Is the report a first step towards a resource volume? This is going to be important to both legislators and scientists. We might want to think about whether this is a two-phase activity. R. Socolow indicated that they have set some boundaries, such as not researching the storage of CO<sub>2</sub> after it has been captured. They were able to sever this from the scope of the study because so many others are doing research on it. P. Zimmerman asked what the expected outcome is; is the intent to pick "winners" and

“losers” for technologies? J. Franz indicated that the Executive Board will need information on the additional funding that R. Socolow has obtained and the list of committee members to review at their upcoming meeting. The Executive Board has to be involved because, with the additional funds, the study is bigger than a typical POPA Study and smaller than an APS Study. C. Murray agreed that this new, intermediary category is a good idea because it has more capital resources than a POPA study and will be completed more quickly than an APS Study. She asked that the proposal be amended to indicate that the reviewers of the study will be vetted by the Executive Board.

J. Drake asked whether the \$25K seed money from POPA enabled R. Socolow to raise the remainder of the funds for this study. He felt that it helped. J. Drake asked whether the Energy Grid Study should be delayed if we can raise other monies. J. Franz said that the budget is tight this year; we shouldn't stop trying to raise outside funds.

### **Comments from Executive Director**

J. Franz asked POPA members for suggestions of people who might be willing and qualified to participate on POPA next year. Because the Nominating Committee's expertise doesn't include all of the types of expertise that POPA members bring to the table, input is needed. There is strength in the diversity of POPA. Suggestions for a possible Vice-Chair of POPA for 2010 are also needed.

### **Proposed Study: Update**

#### **Grid Study**

M. Klein began by crediting Vivek Mohta, who was a member of POPA last year, with the idea for this study. G. Crabtree provided a brief overview of the proposal and then asked whether POPA wanted to keep the study limited and focused or whether we should expand it and make the scope larger. He thinks it would be best to keep the study focused on an area that hasn't received much research (like the means to move renewable energy onto the grid), as opposed to focusing on the smart grid which has already garnered a lot of attention.

**Commentary:** A. Sessoms suggested that the question to grapple with is who owns the grid and who pays for it. G. Crabtree pointed out that the current grid is localized and is more of a patchwork. He and R. Socolow agreed that this is an issue that federal and local governments will have to solve over time. J. Onuchic said that the AC/CD issue is probably something worth researching. A. Sessoms asked whether the study would have to make assumptions about the future of the grid. G. Crabtree said that yes, they would have to make some assumptions. An example would be the possibility of everyone switching to hybrid vehicles, which would then create a scenario where more electricity is used at night than it has been in the past. W. Barletta asked a question about grid system management and said that he recalled several national labs have been working on this. He suggested that we find out about the research that has already been done, relevant to what we are considering doing. The group also discussed whether we could begin this project sooner, if funds are raised outside of POPA. C. Murray and J. Franz indicated that \$10K could be available as seed money for the study, from the Presidential fund if this would help get the study started more quickly.

**Action:** R. Socolow moved to approve the study, with minor adjustments made by the Chair, with \$25K from POPA (available in 2010) and external funding to go above that number with the understanding that if the final budget grows substantially larger, the Executive Board will be involved in the review process. T. Kaarsberg seconded the motion.

*The motion passed, with one abstention (Barletta).*

## **Proposed Study: Introduction**

### **Scarce Elements Discussion**

R. Jaffe introduced his idea for a study. In the course of pulling together information for a class he taught at MIT, he realized that scarce elements play a big role in the physics of energy. Tritium, helium-3, and other materials are very scarce but also widely used in today's energy technologies. For example, scientists have been looking for a substitute for silver, which they use on the joints of microchips, for some time. They have yet to discover it. Silver is one of the scarcest surface elements in the world. While the USGS keeps records of scarce elements, some of the data is proprietary because private companies are mining the materials and don't want the public to know how much they are mining. What POPA would bring to this issue is a connection to how the scarcity of an element may affect energy issues as a whole. No previous study has linked this problem to the energy issue. Solar-photovoltaics, semi-conductors, and other industries all use scarce elements. There is no acknowledgement, on the part of industry leaders, of how the scarcity of these materials may affect progress and innovation.

**Commentary:** F. Houle and P. Zimmerman both support this idea for a study, but caution against assessing global resources for fear of accidentally scaring the market. M. Klein indicated that we will have to deal with the issue of recycling. We can't just look at the availability of a resource. We need to study whether the materials are re-usable and factor this into the equation. There was general agreement that we should first focus on how much of an element is available, prior to looking into the recycling of already used materials. L. Krauss asked whether the AGU would be asked to join our efforts. GSA might even be a better organization to work with. F. Slakey said that he would help R. Jaffe in reaching out to both of these groups. L. Krauss offered to speak with some of the individuals that he works with regarding these issues. T. Kaarsberg added that we may want to explore approaching someone who knows global markets to participate, since we will have to consider certain scenarios that may arise due to scarcity. F. Slakey suggested adding an economist to the study panel. F. Houle mentioned that we may want to speak with ACS because they have a lot of information specific to refinement. M. Klein ended the discussion by indicating that he heard a lot of enthusiasm for the idea and suggested that R. Jaffe create a more specific proposal for review at the next meeting. The proposal should come from the Physics & the Public Subcommittee. F. Houle, L. Krauss, P. Zimmerman, and H. Gao are interested in working on the topic. J. Drake said we will need to consider policy implications and recommendations and should include this information in the proposal that the Subcommittee will draft.

## Old Business

### Update on Statements

The Civic Engagement of Scientists statement that POPA reviewed and approved at the October meeting has been approved by Council and is now available on the APS website.

The Joint Diversity Statement that POPA reviewed and approved at the October meeting has been approved by Council. However, it has not been approved at all levels of the other societies who joined to make the statement. It will not be released until all societies have a chance to approve it. Several POPA members voiced concerns about the statement and suggested that it be paired with a proposal for action. There was unease about making an innocuous statement without any real plan for change. M. Klein will e-mail J. Franz to let her know that POPA is unhappy with the final iteration of the statement, because a strategy for action isn't in place. He will ask J. Franz to voice this sentiment to the E. Board. C. Murray indicated that she will create a proposal, as the new APS President, and will work to find funding to create an action plan. F. Slakey suggested that we invite the APS Director of Education to the next POPA meeting to provide an overview of what his department's goals are regarding pipeline and underrepresented minority related issues in particular.

## New Business

### Nuclear Weapons Complex

P. Zimmerman was asked to introduce the topic that he brought to POPA's attention regarding the Administration's consideration of moving the NNSA out of the DOE and to the Pentagon. He urged POPA to draft a statement regarding keeping the U.S. Nuclear Complex under civilian control. Several POPA members weighed in on where the NNSA should land and the pros & cons of setting up a separate agency vs. housing it within a current agency. National labs could lose funding if the nuclear weapons complex was broken out as its own entity. J. Franz thought we should align ourselves with Dr. Steve Chu's position. T. Kaarsberg stated that Dr. Chu wants NNSA to remain within DOE. W. Barletta suggested that if we do make a statement, it should be about the issues that need to be considered before a decision is made. It was agreed that this is an issue that requires intense review before action is taken.

**Action:** A group will meet at lunchtime to begin work on a statement. The group will include Lubell, Slakey, Budil, Browne, Zimmerman, Narayanamurti, Davis, Barletta, Sessoms, and Socolow. A. Sessoms will take the lead on writing up a draft statement and sending it out to the Chair Line following today's meeting.

## Next Meeting

The next POPA meeting will be held on **Friday, June 5<sup>th</sup>, 2009.**

## Adjournment

**Action:** W. Barletta moved to adjourn the meeting at 2:41 PM. Motion was seconded by F. Houle.

*The motion to adjourn the meeting passed unanimously.*