

**Panel on Public Affairs Meeting**  
**February 1<sup>st</sup>, 2008**  
**529 14<sup>th</sup> Street, NW, Suite 1050, Washington DC**

**Members present:**

M. Klein, D. Moore, R. Eisenstein

J. Browne (via teleconference), K. Budil, C. Callan, P. Coleman, G. Crabtree, J. Drake, F. Hellman, R. Howes, T. Kaarsberg, G. Lewis, V. Mohta, J. Scofield, R. Socolow (via teleconference), A. Sessoms, B. Tannenbaum, P. Zimmerman

**Advisors/Staff present:**

J. Franz, T. Johnson, M. Lubell, C. Murray, J. Russo, F. Slakey

**Members Absent:**

H. Gao, R. Goldston, R. Jaffe, S. Mtingwa

**Guests:**

Michael Curtin, DNDO; Jay Davis; Harry Martz, LLNL (via videoconference); Valerie Thomas

<b>Call to Order</b>
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**Eisenstein called the meeting to order at 8:17 AM.**

<b>Welcome and Approval of Minutes</b>
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R. Eisenstein opened the table for introductions. New members present: C. Callan, P. Coleman, J. Drake, T. Kaarsberg, V. Mohta, P. Zimmerman. First order of business was to discuss the minutes from the October 19, 2007 meeting.

Commentary: D. Moore asked that we change the line “BLM (Bureau of Land Management) used to produce helium...” on page 7 of the minutes to “BLM (Bureau of Land Management) used to extract helium...”

**Action:** A. Sessoms moved to approve the minutes of the October 19th, 2007 POPA meeting with the change as listed above. Motion was seconded by R. Howes.

*The motion to approve the minutes passed unanimously.*

## Subcommittee & Membership Business

R. Eisenstein reviewed POPA's current list of subcommittees: Energy & Environment, Ethics, National Security, Physics & the Public, National Research Policy Committee, Steering Committee (partially statutory). He asked that members decide if this was a sufficient list and, if so, which subcommittees members would like to volunteer to participate on. For subcommittees whose Chairs have rotated off the Panel, a new Chair will have to be elected.

**Commentary:** R. Howes indicated that the National Research Policy Committee has done nothing since she joined. Since the GOCO issue, there has been nothing else for this group to work on. She said she didn't know if it was worth keeping the subcommittee active. F. Hellman indicated that issues could surface in the future that would need to be handled by this subcommittee. F. Slakey said that some of these issues would fall under the jurisdiction of PPC (Physics Policy Committee). M. Lubell explained that POPA works on physics-related issues of importance to society, while PPC serves as the oversight committee for our advocacy efforts. Questions regarding how the subcommittees worked and whether they served a valuable purpose ensued. Some questioned whether the titles for each subcommittee were broad enough, as there are several large topics and issues which we haven't even confronted yet (climate change technology, internet & bandwidth issues, international topics). It was agreed that the Chairs of each subcommittee should be more proactive in their approach to finding and discussing issues that fall under the purview of their particular group.

**Action:** R. Howes moved to abolish the National Research Policy Committee, until such time an issue arose which would make the subcommittee necessary. Motion was seconded by A. Sessoms.

*With 5 votes in support of and 8 votes opposed, the motion did not pass.*

There was no further motion to change the current list of subcommittees, so they will remain the same. Please see "Addendum A" for the list of 2008 Subcommittee Members & Chairs.

J. Franz spoke about POPA membership and asked people to suggest names for new members. She provided a list of past members and then opened the table for suggestions. Please see "Addendum B" for the list of suggested candidates.

## Progress Reports & Updates

### **Nuclear Policy Project**

John Browne joined the meeting via teleconference to provide a status report on the Nuclear Policy Project. The APS Executive Board approved the implementation and funding of this project at its fall meeting. It was also discussed at the Council meeting. The purpose of the project is to facilitate discussion amongst a broad group of people on the future direction for nuclear weapons policy. This is a joint effort with AAAS and CSIS (Center for Strategic and International Studies). The three organizations are each actively engaged. Three (3), one-day workshops will be held between April & May, and will cover military, technical, and international aspects of nuclear policy. The fourth, and final, workshop will be held in early June and will focus on integrating the discussions from the prior three workshops. There will be two (2) commissioned papers written in conjunction with each of the workshops. These papers will serve to frame the debate at each workshop. Participants will consider what issues the country faces and what options are available. The goal isn't to find a particular answer to a problem or to reach consensus. Rather, the workshops will focus on developing guidance. Approximately fifteen (15) individuals will be selected from a cross-section of policy & science to participate in each workshop. A final report will be issued in mid-September, with a draft available in early August. The workshops will all take place in the Washington, DC area.

Chairs for each track have been identified. They are:

Military: Frank Miller, The Cohen Group

Technical: Mike Cornwall, UCLA

International: Former Congressman Jim Leach, Harvard University

Integration: John Hamre, CSIS

**Commentary:** T. Kaarsberg asked how this project and the resultant report will affect/involve the Nuclear Forensics study. J. Browne answered that the true intent of this project is to identify & obtain different points of view on the subjects. B. Tannenbaum mentioned that there will be some overlap of participants in each of the workshops, not just at the final workshop. J. Drake commented on use policy & other issues and wondered if they will be discussed. J. Browne said he did think these topics would come up as issues for debate in the different workshops.

### **Energy Efficiency Study**

M. Lubell provided a brief update. The committee has been working on writing the report, with major help from its two staffers. Two (2) full meetings of the study group have been held. A third is planned for later in February, to be held in Boston, which will focus on reaching consensus on the detailed report outline, tightening up text that currently exists, and reviewing questions that still need answering. The report will concentrate on buildings, transportation, and cross cutting issues. There is no intent to include industrial usage information in the final product. Existing technologies, mid-term "pipeline" research, and long term projects will be investigated and recommendations included in the report will encompass these three time frames. M. Lubell and J. Scofield visited with staffers of the House Energy & Commerce Committee and the House Science & Technology's Subcommittee on Energy in late January and there is real interest in the study's outcome. Staffers suggested they will be happy to take a look at a detailed outline, and there was talk of setting up briefings when the report is released. Legislation on this issue will not occur this year, because Congress passed an energy bill last year. However, there

is a general recognition that certain areas were not taken into consideration in last year's bill. It is understood that this will be a matter for the 111<sup>th</sup> Congress to take into account. M. Lubell indicated that the group has considered how to deliver the report to the new administration, and two public relations firms have been interviewed, one of which may be employed to help with delivery.

**Commentary:** J. Drake said that the whole discussion can't be separated from the issue of tax policy on gasoline. M. Lubell observed that the question of tax policy is a much larger issue than just gasoline tax. The issue is carbon, and there is a great expectation that a cap & trade policy will be adopted in the very near future. The study will have to address this broadly and the report will most likely include some statement on the issue. T. Kaarsberg suggested that CAFE (Corporate Average Fuel Economy) increases should definitely be included in the report. M. Lubell said that they will include this information.

### Helium Shortage Issue

R. Eisenstein reported that he spoke with Don Shapiro, and the National Research Council (NRC) will reprise its 2000 study on helium. A study has been proposed titled, "Understanding the Impact of Selling the Helium Reserve". The NRC will assess the impact of selling the federal helium reserve. This plan of action will take eight (8) months. R. Eisenstein said there probably isn't much more POPA can do on the topic. He said it is in capable hands at the NRC.

**Commentary:** M. Lubell showed concern about whether the NRC is asking the right question. Shouldn't the focus be on how we move forward? What are the needs for helium in the technology & industrial arenas, and how do we meet them? Shouldn't we have recommendations from the NRC on how the needs can be met?

**Action:** M. Lubell will call Don Shapiro of the NRC to discuss the issue.

**Commentary:** F. Hellman suggested that a public website be created that will allow for APS members to offer suggestions for reports and areas of interest, like the helium shortage issue, in the future. T. Kaarsberg added that someone should monitor the site for a small period of time after it is up and running. F. Hellman added that perhaps other committees, like PPC, would want to follow suit.

**Actions:** F. Hellman moved to create a web based portal that will allow APS members to share their ideas with POPA. A disclaimer, indicating that POPA is not obliged to investigate all suggested ideas, as well as information regarding POPA's broad scope and purpose (as written in the bylaws) will be included.

***Motion passed unanimously.***

B. Tannenbaum made a second motion that POPA recommend to the Executive Board that other APS Committees look into a similar option. Motion was seconded by A. Sessoms.

***Motion passed unanimously.***

**Nuclear Forensics Study**

J. Davis introduced himself and provided his background. He indicated that this study was chaired by Mike May, and was done in an effort to review the technical & operational issues associated with nuclear forensics. While the tools to support law enforcement have been developed and are employed regularly, there are questions about how forensics information is aggregated and shared. It is important for us to know how best to handle both pre- and post-detonation scenarios. What would happen if we were to intercept large quantities of a radioactive substance in a typical border scan? Would it be possible for the United States to trace the material back to its provenance? In a post-detonation scenario, would we be able to determine the responsible party and do we have the means to determine whether this operative is capable of striking again?

The report provides recommendations on what steps need to be taken in order to meet certain goals, including:

- Increasing the speed of field diagnostics
- Developing the nuclear workforce
- Establishing a sample-matching database internationally
- Running counter-terrorism exercises on a more regular basis
- Establishing governmental groups to review, evaluate, and advise on nuclear forensics and what this information means in the event of an emergency

**Commentary:** R. Eisenstein said he thought the report was wonderful and that the conclusions are clear. J. Davis indicated that there would also be a classified report produced by the National Academy. T. Kaarsberg said she was uncomfortable supporting the report as a physicist because there are a lot of items that fall out of our jurisdiction. She said it is unnerving that everyone who worked on the report is a physicist, when there are lots of other issues involved. P. Zimmerman said that the judgments were soundly based, and that the people listed as participating on the study panel have background in several other areas. Physicists were involved in the production of the report, but they aren't "just physicists". A. Sessoms found the report very sensible. T. Kaarsberg stressed again that people who work on these other items are not represented. V. Mohta suggested that we ask the question, "Can we, as members of POPA representing all APS members, feel comfortable signing off on this report?" He thinks so. The report doesn't suggest that it is the treatise on the topic of nuclear forensics. It simply sticks to common sense and advances the state of knowledge on this subject. R. Eisenstein indicated that the APS Executive Board will be the next to review the report and J. Franz discussed the process of having the report approved. As a past member of the Executive Board, J. Drake indicated that he almost always considered the experience of the committee members working on the report, who had more technical expertise on the topic. F. Slakey indicated that the report was sent to external review, and edits of the report were provided. The reviewers confidently support the report. Their names will be released when the report is sent to the Executive Board. F. Hellman suggested that some of T. Kaarsberg's concerns might be alleviated by letting the review process include representation from some other disciplines. F. Slakey turned the group's attention to the bios of some of the authors of this study. They are the world's experts on this issue. J. Drake questioned whether the external reviews will be shared. B.

Tannenbaum indicated that they can be shared. Discussion continued on whether the reviewers' names should be included in the report. B. Tannenbaum indicated that acknowledgements are included and the names are listed.

**Action:** P. Zimmerman moved to adopt the report, with any small modifications noted in today's meeting. A. Sessoms seconded, with an addendum to review the commentary provided by external reviewers prior to the report going to the Executive Board.

*The motion passed, unanimously.*

### **Nuclear Power Workforce Study**

A. Sessoms took the lead in discussing this study & the proposed report, as S. Mtingwa was out of the country. A brief review was provided. In short, the working group concluded that there are a few areas/fields of the nuclear power workforce that are in woeful need of attention, including radio chemistry and nuclear chemistry. Both of these fields seem to have been abandoned in higher education in America, both by students and faculty. The manpower for the workforce is not being produced. The report is scenario driven, but provides a very useful survey of what's going on today. The conclusions are somewhat subjective, because manpower needs are hard to project. Certain departments and areas of study are so small that the report wasn't able to provide objective results based on quantitative analysis. There is an acknowledgement that people are needed, but how many are needed is difficult to quantify. The report needs to be reviewed by an external committee. R. Howes added that someone has to do something about the absence of radio and nuclear chemists. The study underlines this concern. Also, we should be very concerned about the closing of training reactors. Many two-year college graduates, who move on to work at a nuclear reactor site, are not even being given an opportunity to visit one prior to taking a job.

**Commentary:** R. Eisenstein states that POPA clearly thinks this is an important activity. At the end of the day, the desired outcome is a report that is of high quality. V. Mohta indicated that the report seems to focus primarily on the supply side of the workforce, and not so much on the demand side (wages, being one item of interest). A. Sessoms responded that this was deliberate. They investigated the issue from the standpoint of the three scenarios that will ultimately drive manpower needs in this industry's future. The working group did not look at manpower needs in relation to economics. G. Lewis questioned why R. Howes thinks we need someone with a Ph.D. working at a nuclear reactor, when individuals without a doctorate can handle the work more cost effectively. M. Lubell said that energy companies are not interested in hiring a Ph.D. except for the design phase of a nuclear reactor start-up. He thought the report makes the assumption that there is demand for Ph.D. level employees at these plants, long-term, when there isn't. T. Kaarsberg pointed out that the nuclear industry is very low-tech. This should be recognized in the report. P. Zimmerman agreed with the report in that we need to have nuclear engineers for both the design and construction phases of a nuclear reactor site, but added that career paths towards management, after a site is constructed, should also be given consideration. R. Eisenstein mentioned that the report doesn't really speak to how we've been able to keep our robust nuclear power industry running over the course of the past few decades. Some hires are retrained for nuclear engineering from other disciplines, but that doesn't account for the entire workforce. The report should examine

this. If we could address how many training reactors are needed to properly prepare the workforce, these would be beneficial statistics to include. The solutions and conclusions that have been drawn are the same as we've seen in past reports. Why isn't industry taking a more direct role in making sure we are preparing for the future? The report should be more creative with its suggestions and solutions. We have to understand several aspects of the industry's workforce needs, more completely, prior to releasing this report. J. Franz directed attention to the fact that there's hardly any mention of physics in the report. A. Sessoms responded that this made it easier for the working group to do unbiased, market-sensitive analysis. Perhaps we should make mention of why APS is involved in reviewing this topic, if physics isn't very involved in the subject matter. M. Lubell revisited the issue of safety and another debate ensued. R. Eisenstein interjected, adding that this is a very important issue, but it's something that needs to be referred back to the committee for further consideration. There is no chance that the report, in current form, can be forwarded on to the Executive Board in time for their April meeting.

**Action:** R. Eisenstein asked POPA members to send their comments (with copy to him) to A. Sessoms, S. Mtingwa, and F. Slakey so they can convene & determine a direction for the study to move. F. Hellman moved to have the comments circulated to POPA for approval, prior to the report going to the Executive Board. The motion was seconded by A. Sessoms. R. Eisenstein amended the earlier action item and suggested that the report be reviewed and vetted by the Energy & Environment Subcommittee over lunch, with the resulting commentary provided to all of POPA following.

*With a vote of only one opposed (Scofield), the motion passed.*

#### **POPA Report Format Feedback**

T. Johnson made brief comments about standardizing the look of all future POPA Reports. She then passed around four (4) examples of design layouts and asked all members of POPA to vote for their favorite. The designs presented were reviewed by all POPA members, who then cast their ballots prior to breaking for lunch.

**-BREAK FOR LUNCH-**

## Review of Proposed 2008 POPA Study

V. Thomas provided an overview of how this energy study originated. It was initially proposed by P. Eisenberger and then found its way to the Energy & Environment subcommittee, for review and revision. R. Howes and P. Eisenberger were both very much involved with the redraft. The proposed study would evaluate the potential of new energy sources, such as solar & geothermal. The study would be done within a year's time and would cost about \$25K. This would be a small study, drawing on information that is already available. The subcommittee would like POPA to do a focused report, and suggested deciding on a small selection of renewable energy sources to research. It's also important that the final product be useful to Congress. R. Socolow joined the conversation via telephone.

**Commentary:** J. Scofield indicated that he is still unsure as to whether this is a study on renewables or a study on non-carbon sources of energy. V. Thomas confirmed that this is a study of renewable energy sources. She indicated that there is another study being done by the National Academy which would be larger in scope than anything we plan to do. R. Socolow indicated that if there is something the physics community could add to what NAS is doing, and if we could do it in a condensed time frame, then the proposed study might be helpful. Discussion ensued regarding whether it made sense to compete with the NAS and whether we bring anything new to the table that they won't already cover. M. Klein suggested that there are two options POPA can take: (1) decide not to move forward with this proposed study or (2) rethink and revise it a third time. He suggested we find out more about the NAS and NRC reports that have been mentioned prior to ruling the study out completely.

**Action:** J. Scofield moved to table the discussion to the Energy & Environment subcommittee for review. This proposal and other similar studies should be taken into consideration.

M. Klein agreed to contact NAS and NRC to find out more about the studies they are conducting. T. Kaarsberg will convene a conference call of the Energy & Environment subcommittee to discuss the possibilities. E&E subcommittee will bring their recommendations back at the next POPA meeting.

## Presentation & Discussion – Domestic Nuclear Detection Office (DNDO), Department of Homeland Security

Dr. Michael Curtin, a nuclear physicist contracted by the Department of Homeland Security's DNDO, was joined via videoconference by Dr. Harry Martz of Lawrence Livermore National Laboratory (LLNL) to present POPA with a question: "Does APS wish to undertake a review of the Cargo Advanced Automated Radiography System (CAARS) proposal to use depleted uranium (DU) as a test surrogate for special nuclear material (SNM) and the specific test configuration?"

**Commentary:** A. Sessoms and P. Zimmerman agreed that this is important and worth doing. The DHS would provide a two-month time frame to review the technology. Congress wants outside review, so the DNDO can't run the test themselves. B. Tannenbaum thought individuals should participate, not APS as a whole. J. Drake

thought our participation would be fine, as long as we get to see the results of the experiment. R. Howes indicated that APS should be careful that there isn't a perception created that we are endorsing a particular system. M. Klein suggested that we put together a proposal of how we would work with the DHS and offer them three (3) people who will work on the experiment. Discussion continued on whether we should accept compensation for our participation in this project. Some felt it appropriate because any business that provides consultation receives a normal consulting fee. Others considered accepting compensation an indication that our "name is for sale" or that the DHS is "buying our endorsement". M. Lubell pointed out that, without the Office of Technology Assessment (OTA), Congress regularly uses independent organizations to review new technology for them.

**Action:** A. Sessoms moved that a proposal be written and sent to the Executive Board for review. It should include a budget and the names of three volunteers. We will leave it to the Executive Board to determine whether APS will be compensated for our participation. The motion was seconded by R. Eisenstein.

*Motion passed unanimously.*

## **New Business**

### Omnibus Review

M. Lubell provided a review. Congress & the White House have been unable to come to a conclusion on the budget. ITER has been zeroed out. Irreparable harm has been done to science funding. Already, the Department of Energy has rejected some 700 proposals in the energy sector due to non-funding. Democrats have said that the President should take the first step in rectifying the situation. In an effort to reclaim some of the losses, we are concentrating our efforts on having certain items included in the House supplemental bill. These are: (1) \$100M for ITER; (2) \$50M for high energy physics; (3) \$75-\$150M for DOE facilities, light sources, etc. The Senate would like to add even more, as they want to do something for NSF. The Senate supplement would push the total to \$400M for science. The APS Office of Public Affairs (OPA) is working with democratic leadership to push something through. The OPA has published op-eds on the topic and generated a lot of interest in the issue.

### Proposal for Study on Climate Technology

T. Kaarsberg would like to propose a study on climate technology. She asked if we could add this item to next meeting's agenda. M. Lubell suggested she write up a proposal, pass it around, and mention it to the Steering Committee as an item for the next agenda.

### Proposed Legislation in NY on Radiation Detectors

P. Zimmerman mentioned an issue that is affecting the State of New York. Legislation has been proposed that would require owners of radiation detectors to have a license for their equipment.

**Commentary:** M. Lubell suggested that he could arrange for a meeting between P. Zimmerman and Michael Bloomberg, Mayor of New York City. R. Howes thought this would be a good, low-key approach to inject technical sense into the minds of those considering the proposed action.

**Action:** M. Lubell will set up a meeting for P. Zimmerman with Bloomberg's office.

P. Zimmerman moved to take New York's proposed legislation, to license many forms of radiation detectors, to the Executive Board as an information item. The motion was seconded by B. Tannenbaum.

*Motion passed unanimously.*

#### Next Meeting

The next POPA meeting will be held on **Friday, May 30<sup>th</sup>, 2008.**

#### Adjournment

**Action:** P. Zimmerman moved to adjourn the meeting at 3:19 PM. The motion was seconded by T. Kaarsberg & others.

*The motion to adjourn the meeting passed unanimously.*

# ADDENDUM A

## Panel on Public Affairs 2008 Subcommittees

### *Energy & Environment*

- Tina Kaarsberg (Co-Chair)
- John Scofield (Co-Chair)
- Piers Coleman
- George Crabtree
- James Drake
- Frances Hellman
- Ruth Howes
- Vivek Mohta
- Sekazi Mtingwa
- Rob Socolow

### *Ethics*

- Robert Socolow (Chair)
- Robert Eisenstein
- Miles Klein
- Duncan Moore

### *National Security*

- John Browne (Chair)
- Kim Budil
- Miles Klein
- George Lewis
- Allen Sessoms
- Benn Tannenbaum
- Peter Zimmerman

### *Physics & the Public*

- Robert Eisenstein (Chair)
- Piers Coleman
- Haiyan Gao
- Frances Hellman
- Allen Sessoms
- Benn Tannenbaum
- Peter Zimmerman

### *National Research Policy Committee*

- Frances Hellman (Co-Chair)
- Ruth Howes (Co-Chair)
- James Drake
- Robert Eisenstein
- Haiyan Gao
- Duncan Moore
- Sekazi Mtingwa
- Peter Zimmerman

### *Steering Committee*

- Miles Klein (Chair)
- John Browne
- Curtis Callan
- Ruth Howes
- Duncan Moore
- John Scofield
- Rob Socolow

# ADDENDUM B

## CANDIDATES FOR POPA MEMBERSHIP, 2009

- 1) ALEX GLASER, Princeton University  
(Suggested by Benn Tannenbaum)
- 2) JAY DAVIS, Retired from Lawrence Livermore National Laboratory
- 3) JERRY GARVEY (Suggested by Bob Eisenstein)
- 4) GERRY EPSTEIN
- 5) ROBERT LIMPert, Rand
- 6) JACK GIBBONS
- 7) ANNE DAVIES, Retired
- 8) MAXINE SAVITZ
- 9) KATHRYN CLAY
- 10) MICHAEL BROWNE, Swarthmore University  
Plasma Physicist
- 11) JOHN DWIGHT, Idaho National Laboratory
- 12) PHILLIP "BEAU" HAMMER
- 13) JAY BRAD MARSTON, Brown University  
Condensed Matter Physicist, Climate Change Expert  
(Suggested by Piers Coleman)
- 14) SHIVAJI SONDHI, Princeton University  
Condensed Matter Physicist, Energy Policy Expert  
(Suggested by Piers Coleman)
- 15) PAUL PEERCY  
Condensed Matter Experimentalist, Dean of Engineering  
at the University of Wisconsin, Madison  
(Suggested by Miles Klein)

## ADDENDUM B

### CANDIDATES FOR POPA MEMBERSHIP, 2009 - CONTINUED

- 16) DAVID BALDWIN  
General Atomics
- 17) DAN KAMMEN
- 18) MIKE WITHERELL, Retired FNAL Director  
(Suggested by Benn Tannenbaum)
- 19) DUANE DIMOS, Sandia National Laboratory  
Nuclear Weapons & Public Policy  
(Suggested by George Crabtree)
- 20) NORA BERRAH  
Research Funding & Gender Equity  
(Suggested by George Crabtree)
- 21) PIERCE CORDEN, Retired Division Chief at ACDM (?) and Senior Manager at  
Comprehensive Test Ban Treaty Organization  
(Suggested by Peter Zimmerman)