

**U.S. Environmental Protection Agency**  
**Science Advisory Board**  
**Scientific and Technological Achievement Awards Panel**  
Final Minutes of Closed Conference Call Meeting August 5-7, 2003

**Committee:** Scientific and Technological Achievement Awards Panel (STAA) of the U.S. Environmental Protection Agency's Science Advisory Board (SAB). (See attached Roster)

**Date and Time:** August 5-7, 2003 (See attached Federal Register Notice )

**Location:** Science Advisory Board, Room 6013, Ariel Rios Building, 1200 Pennsylvania Ave, Washington D.C.

**Purpose:** The purpose of the conference call was to allow the Panel to review 136 papers nominated for the EPA's Scientific and Technological Achievement Awards and to discuss possible improvements to the process and program.

**Materials Available:** The agenda, roster, Federal Register Notices for the wide cast and for this conference call, the biosketches for the short list, and 136 papers to be reviewed, the nominating forms for those papers, and the nomination and review criteria, were circulated in advance of the meeting. The Panel had access to previous year's reports and Agency responses through the SAB website ([www.epa.gov/sab](http://www.epa.gov/sab)). The following materials were distributed at the meeting: a table summarizing the preliminary individual ratings of the papers, summary tables from previous years reports giving some idea of what numbers (and percentages), another set of the awards criteria, a public comment, and the *STAA Panel's Recommendation to Improve Visibility of the Scientific and Technological Achievement Awards (STAA) Program: an EPA Science Advisory Board (SAB) Commentary* (EPA-SAB-EC-COM-01-004)

**Attendees:** With the exception of Gary Toranzos, who was unable to attend in person and who was not brought into the meeting by speaker phone, all Panelists were present for the meeting. The attached roster identifies the Panelists and their employers.

### **Summary**

There were some departures in timing from the agenda. The major elements at this meeting were:

1. SAB Staff Office Director Vanessa Vu invited the Panel to suggest ways in which the scientists receiving the STAA awards could receive greater recognition.
2. The Panel met from 9:30 - 5:30 on August 5, reviewing papers 001-062
3. The Panel met from 8:10 - 5:05 on August 6, reviewing papers 063-136, carefully re-considering all preliminary Level I nominations, and also considering those papers whose ratings were considered in any way tentative.
4. The Panel met from 9:00 to Noon on August 7 to discuss potential improvements to the process and program. The Panel also discussed

how to finalize its own report for presentation to the Executive Committee.

5. The Panel ultimately recommended

Level I Awards	7
Level II Awards	18
Level III Awards	29
Honorable Mentions	32

6. The Panel recommended the following potential improvements to its own process for its review next year: an earlier start, all panelists will read all abstracts; panelists will read more papers; after the DFO has determined which papers have one or no volunteer readers she will promptly ask individual panelists to read specific "orphan" papers; panelists will be less modest in assessing their own level of expertise;
7. The Panel made minor recommendations for improving the administration of the STAA program. These will be found in the Panel's report to the Agency.
8. The Panel considered some special recognition of the 25<sup>th</sup> anniversary of the program, which will occur in 2005.

The following chronological summary provides more detail.

Before the meeting, each panelist had read a number of papers and reported their rating of the paper (Level I, II, or III, HM or NR) together with an estimation of the individual's expertise (1-4) to the DFO. The DFO entered these, with the reader's names, into a master table. The Panelist's provided the DFO with their individual personal notes from their reviews for the FACA files.

On Tuesday August 5, at 9:30, absent Guy Lanza (who arrived at 9:45), Ms. White opened the meeting saying that, because Vu had to leave shortly for a different meeting, she should speak first so that the Panel could have the benefit of her thoughts while she was there. Vu's remarks were a mix of ones specific to the work of the Panel and those about the Board in general, including:

- a. Thanking the Panel for their work and assuring them of the importance of the Awards program and their input.
- b. The SAB's new panel formation process (as of May 2002) and the proposed re-organization of the SAB.
- c. The proposed move of the SAB staff in March 2004 and the planned facilities for meetings.
- d. Plans for an SAB Annual Meeting, the first of which will probably be held in December 2003

- e. Description of some of the current activities of the Board.

Vu responded to questions from the Panelists on these topics and engaged in discussion. In general, Panelists were pleased with the changes they had seen. Vu departed at 9:50.

DFO, Katheen White made a few practical announcements, passed out the agenda, a collection of summary tables of awards by category for three earlier years, and the table of individual ratings by paper for this years nominations. Panelists then double checked the ratings on the table against their records so that any errors could be detected and corrected before discussion began. Richard Gilbert made a correction to the ratings for paper #59, removing himself as a rater because he is employed by Battelle, which also employed some of the co-authors. Josphe Landolph noted that his ranking on paper #128 had been omitted and added it (rating I, expertise 3)

About 10:10 the chair, Deborah Cory-Slechta asked the Panel to introduce themselves (see attached biosketches). She had been on the previous panel which included many individuals who served for ten years. At 10:20 Cory-Slechta referred the Panel to the summary table for previous years and, while recognizing that this new Panel could set the bar where it wished, expressed the hope that place would not differ radically from where it had been in the past. Timothy Buckley noted that this material had not been provided in advance of the meeting and referred to the process of aligning individual and collective scores with those of previous years as "calibration". Cory-Slechta observed the need for calibration is important, that she, John Maney and Fred Pohland would provide some continuity, and that the Panel would be serving for three years to provide continuity. Pohland noted that the Panel, in the past, has given some credence to expertise of the reviewer.

At 10:30, Cory-Schlecta went through the papers identified two which only had one reader and needed a second reader. Maney will read #66 and Newman will read #120).

The Panel then identified all those papers where all the individual reviewers were agreed that the paper did not deserve an award. If any panelist wished to challenge the preliminary assignment of those papers to a rating of "NR" they had the opportunity to do so.

The Panel then began discussing the other papers in order, a process which took the better part of two days, ending about 4:00 p.m. on Wednesday August 6.

On Wednesday August 6, the DFO opened the meeting shortly after 8:00 by reminding the panelists that she would need their documentation for their decisions. She assured the panelists that the documentation would not be in a public file. The file could be seen by SAB Staff, Office of the Inspector General or GAO. The purpose of the documentation is to show that they actually read the papers and did not simply provide numbers.

The Panelists finished their preliminary consensus rankings of all papers at around 4:00 pm. The Panel then compared their preliminary scores with the final scores of the previous year's. After this, the DFO passed out the Award Criteria and the chair read them to the Panel. There was some discussion of whether review papers could receive a Level I and the Panel agreed they could. The Panel then carefully reconsidered all the papers which had received a preliminary consensus rating of Level I to see whether a Level II would be more appropriate.

Then the Panel considered papers (other than those for which the Level I award had been proposed) which had been flagged for further discussion when the Panel first considered them and any others which the Panelists wished to reconsider.

After the Panel had reached its conclusions independent of any public comment, the DFO distributed a public comment relating to one of the papers and invited the Panel to read the material and consider, in the light of it, whether it wished to make any changes to its ratings. The Panel expressed their gratitude that they were able to reach their conclusions independently and then receive the comment.

Before adjourning, shortly after 5:00, the chair and Panel identified the following topics for Thursday's discussion:

1. The need for any additional areas of expertise on the Panel and other improvements to the Panel's process
2. Contribution of EPA authors
3. A better definition in review articles
4. Papers that might be a sequel of previously awarded papers
5. Ways to improve recognition, especially of non-EPA co-authors
6. Outreach to program offices and regions
7. Feedback
8. Quarter Century piece
9. Adding criteria on QC/QA and uncertainty of the data.
10. Discussion of redundancy between Level III and HM.

Not all panelists were present at 9:00, on Thursday, August 7. Those who were present interacted informally with SAB Staff Office Director, Vanessa Vu, who spoke a bit about the public meeting held this week on the proposed SAB reorganization. Vu left about 9:15 around the time Buckley arrived.

The Panel agreed it did not wish to make any further changes to the ratings it had assigned the previous afternoon.

The Panel briefly discussed practical matters, such as travel and time. The DFO distributed the *STAA Panel's Recommendation to Improve Visibility of the Scientific and Technological Achievement Awards (STAA) Program: an EPA Science Advisory Board (SAB) Commentary* (EPA-SAB-EC-COM-01-004)

The chair thanked the Panel for their hard work and at 9:30 began discussion issues relating to the Panel's process, the process of administering the STAA program, the program itself and a possible Quarter Century report. The discussion is organized below by topic.

1. The need for any additional areas of expertise on the Panel and other improvements to the Panel's process

The chair noted there were a few papers where the readers listed their expertise as 1, and asked whether there was additional expertise needed on the Panel. Maney noted that those papers were scattered throughout the different categories and he could identify no clear areas of expertise related to them. Maney mentioned that we had one member missing who would be with us next year. Buckley noted that there were few epidemiology papers nominated and no epidemiologists on the Panel. Cory-Slechta says EPA does little epidemiology.

ACTIONS: Gilbert suggested we look at the papers with no readers or only one volunteer reader for a clue about where expertise might be lacking

Buckley thought that ecology might be an area where an additional reader would be helpful; Cory-Slechta asked Lanza and Newman to consider this and report back. Newman thought an ecological modeler might be a good addition.

Calvin Chien suggested, and the Panel agreed, that all Panelists should read all abstracts next year

Cory-Slechta said we would need people to read 30-40 papers each next year.

Because the Panel is already formed for use through FY2005, panelists should receive the papers earlier than this year.

Once the DFO has determined which papers have one or no volunteer readers, she will promptly invite specific panelists to read specified papers.

By inspection of the table, Chien observed that panelists identified themselves as having Level 4 expertise for only about 5% of the papers and most of these were attributed to three panelists. He suggested that, given the expertise of the Panel, this was unlikely to be true and that panelists were being too modest. He urged people to be more accurate in their future self-assessments for this purpose.

## 2. Contribution of EPA authors

This discussion hinged on the requirement that the EPA authors contribute at least 50% of the effort of the piece. One view is that the Panelists should assume that the papers would not have been nominated had not both the EPA authors and their management confirmed this was the case. However, papers in which the EPA author is not first, last or corresponding author made some members of the Panel wonder whether they could accept this in good faith. This was exacerbated in cases where the EPA author(s) were not published in the field before and the non-EPA authors were.

Michale Newman asked "50% of what?" If it is work hours, a technician could be lead author. Buckley asked whether the DFO go back to Agency for clarifications on contributions if questions were identified before the meeting? Cory-Slechta thinks this might be the easiest way to deal with the exceptions but the DFO is not optimistic about this.

Cory-Slechta suggested intellectual contribution, but others thought that was too fuzzy.

Landolph thought the problem Cory-Slechta raised could not be solved and suggested a separate category, "EPA and External Collaborative Efforts" to be ranked separately.

Pohland asked why the non-EPA authors could not receive money. The DFO said she thought there was a ban on using PC&B awards money for people who are not federal employees. Maney says the internal recognition encourages talented people to stay in EPA. The cash is more like a bonus.

Pohland asked if other kinds of recognition were possible and the DFO thought there were.

Maney asked what the STAA program was trying to encourage: good science by EPA employees or good science to be funded by EPA? If we just want EPA to be doing good science, the EPA contribution is less of an issue.

Cory-Slechta was really concerned about EPA employees being rewarded for scientific work that was really someone else's product.

Newman thinks groups often try to make rules for the outliers and sometimes they aren't such good rules. He asked whether there had been some bad feedback, but no one really knew.

Pohland is less concerned about the person getting credit if the science is good as long as the others that do the work get credit. Pohland thinks recognition for a piece

of work is usually shared and whether it is internal or external shouldn't matter. Pohland would like something more than a letter, perhaps a plaque shared by those who did the research and perhaps bring them in for the awards ceremony. Cory-Slechta thought Pohland's suggestion had some other good ripple effects such as encouraging external collaborations.

**ACTIONS:** The DFO will find out if non-EPA employees get recognition and, if so, what kind of recognition and report back to the Panel.

There were no other actions related specifically to this issue, but the discussion resulted in some ideas being added to the recognition topic.

### 3. A Better Definition of the Review Articles

The Chair read the current definition, "A review article may be in any disciplinary area. Review articles should include a synthesis and a critical analysis of previous work that lead to a better understanding and provide new insight into a particular discipline." Landolph thought there could be separate categories: books book chapters, editorials, educational materials.

**ACTION:** Cory-Slechta will draft up some definitions and circulate them.

### 4. Papers that might be a sequel of previously awarded papers

The question on the nomination form does not appear to track exactly with the language on page 5 of 10 of the eligibility description. Cory-Slechta says that question is rarely answered.

Many good people will win multiple awards over time and a new paper may provide a significant, award-winning advance over a previous award-winning paper. Pohland's concern is about something else. It is about someone re-writing the same stuff again and again in a journal article and whether the Panel might accidentally award the same work twice.

Chien suggested that the nominator could provide the previous award-winning paper so the Panelists could be sure the new paper wasn't a rehash as described above by Pohland. Also, the authors could write a brief statement about how the paper was different.

Pohland would like a listing of awards (and paper title) by individual. They seem quite keen on this and see other benefits as well. For example, the younger ones could identify who were authors of award-winning papers who might serve as good mentors.

**ACTION:** The DFO will ask ORD if it would be possible to have a listing of authors with awards previously won and the paper titles of award winning papers..

### 5. Ways to improve recognition, especially of non-EPA co-authors

Landolph was at this year's presentation at the end of the first day of the EPA Science Forum. There was wine and cheese and crackers, which was nice, and it was noisy, which made SAB Chair Bill Glaze's remarks hard to hear. He thinks it should be more formal and the Level 1 awardees should each be given slots at the Plenary section of the Forum to give 15 minute talks. Cory Schlechta thought the STAA Chair should also give a little talk first. Maney thought a poster in the poster session would also be good.

Newman noted that any process that is not transparent accumulates myths. Cory-Slechta thinks that the EPA scientists don't know that much about the program. Could more information about the Panel, process and distribution of awards be included

in the Awards Process?

Newman suggested that some sort of note be sent to the world recognizing the awardees. (After the meeting Lanza suggested by email that the National Council on Science and the Environment (NCSE) in DC might be willing to announce the winners in their widely read Science, Environment and Policy Report - - both print copy and online(NCSE@NCSEonline.org). NCSE has a wide following in the environmental community including a substantial academic membership and shares common themes with SAB (e.g. NCSE's "motto" is "Improving the Scientific Basis for Environmental Decision making."). If there is an interest in doing this, he offered to check with some NCSE colleagues about the possibility.

Pohland would like something more than a letter, perhaps a plaque shared by those who did the research and perhaps bring them in for the awards ceremony  
Why aren't EPA covers of Cell, Nature, etc. framed and on walls?

**ACTION:** The DFO will ask ORD what it does for recognition, including where the list of awardees is posted and whether it is put in a journal or receives other external coverage.

#### 6. Outreach to program offices and regions

Maney asked if there were good papers the panelists knew of that weren't nominated. The DFO said Toranzos had remarked on this, but she hadn't had a chance to check.

There was some discussion that the nominations seem to come disproportionately from those labs with young aggressive directors. Buckley asked about the regions and program offices. Pohland thinks the SAB staff should encourage EPA to make this work. Buckley said he knew very little about this when he worked at EPA-RTP. Maney thought a news release could go on the EPA's website. Buckley thought it would be great if the letter went from the Administrator.

**ACTION:** The Panel agreed that the Agency should continue to reach out to the programs offices and regions.

#### 7. Feedback

Newman lead the discussion on feedback, saying, in his experience, feedback to everyone is important, but it is a lot of work.

Cory Schlecta observed that this is the first year the SAB staff is collecting the panelists individual written comments. Her concern is that, if feedback is provided, it needs to be done carefully.

Pohland agrees with the notion of feedback, but doesn't want to tie it to his personal notes. Nor does Newman; his were drafted for a different reason.

Cory-Schlecta feared how much work would be involved and Pohland feared litigation.

Newman suggested that, next year, when they review the papers, panelists write down something positive or enhancing, be sure to write it down succinctly

Chien suggested that three issues be addressed: merit of work, what's missing, what we would suggest.

Pohland thinks there is a big difference between the need of students for feedback and the needs of active researchers.

Cory-Slechta said, if you do it for one, you should do it for all, and that's a lot of work. Newman noted that this does put the Panel at risk. Chien suggested providing the summary table with awards by area so that those who did not receive awards could seek mentoring by those who did.

Similarly, Lanza thought an oblique way of addressing it would be to provide the losers with the list of winners. Maney said it could be flowery and encourage them to

apply again another year. Cory-Slechta thinks they'll get this anyway as part of the improved recognition.

No action resulted from this discussion

#### 8. Quarter Century Piece

During the Panel's term of service the STAA program will have its 25<sup>th</sup> anniversary. The Panel discussed whether to mark this occasion (an idea everyone liked) and in what way. One possibility would be a documents, such as an SAB commentary, or something fancier. The possibilities of other press or face-to-face vents were also raised.

While it would be good to summarize statistical trends over time, to make the document engaging, it should look at themes (like dioxin and papers that resulted in a paradigm shift) or profound topics (such as disinfection by-products where EPA was the originator). It would be nice to interview early award winners, ask how it affected their careers and include "Just So" stories (Ask Newman) that provide richness and depth by profiling certain scientists. To get a big readership need to address how thoughts have emerged, problems have emerged and how EPA rose to the challenges. If you can add a face every once in a while you'll get more readers, too. There might be some looking forward aspects, too.

Analytical Chemistry did a special edition with the top 25 articles (based on number of hits) in the last 25 years. Perhaps the Panel could write a feature article for ES&T to be published 2 years from now – if so, the Panel might need to discuss it soon with ES&T

Where research became popular tracks the regulatory dimension. Buckley hopes that research also influenced regulations.

#### 9. Adding criteria on QC/QA and uncertainty of the data.

Maney introduced this discussion with a brief description of the Agency's Quality System and the OMB Information Quality Guidelines, emphasizing how the Guidelines change what science can be used in decision-making and increasing the importance of being able to document that the science was done well. If it isn't transparent, reproducible, have integrity as defined by the Data Integrity Act, EPA can't use it. He spoke of the SAB review of the Agency's Quality System and came across large areas of unreliable data which subsequently caused the regulations to be withdrawn. The Data Quality Act is forcing EPA to revisit decisions it has made, bromate, for example. He mentioned devastating reports by Office of the Inspector General on problems with data quality at EPA.

Buckley felt strongly the judgement should be based on the papers only. Cory-Slechta also placed great emphasis on the publication of a paper in a peer-reviewed journal as evidence of the integrity of the data. She sees many of the quality issues Maney raised as being ones of experimental design which reviewers should address for the journal. Maney responded that the STAA isn't going back to the raw data, so we are looking at things that will give us comfort: training of field workers, second level review of path slides, etc. He ranks ES&T high, but reviewed an article in it yesterday that was junk.

Cory-Slechta STAA exists to reward good science. Maney agrees. Newman said its do good defensible science. Maney says we have learned expecting it to be done (as the journals do) is not working.

Gilbert had trouble finding out what quality does go into the measurements. EPA says you have to have a QAPP if you are going to collect any kind of environmental data. He described the process briefly. Two papers he read mentioned the QAPP. He never saw any discussion of the number of samples to be collected, etc.

Newman has seen great variation in readers on QA/QC. The Peer Review

process doesn't address this sufficiently. Pohland observed that, after many years as an editor, he knows authors vary and many journal reviewers are not careful about this part of review. Researchers in general do not pay enough attention to this topic.

The DFO observed that the SAB found it necessary to add separate items for the Quality System and prior peer review on requests for SAB reviews. She also referenced the Conservation Foundation/American Chemical Society report (prepared before 1985) which observed there were many meanings of the words "peer review" and many different purposes for which it was conducted.

Newman thought the Panelists were talking about instituting something in STAA to the effect that the Panel would consider experimental design and QA/QC and suggested adding a sentence, "judge the soundness of the conclusions relative to QA and experimental design."

Maney suggested that the nomination form would include an element on how well the peer review journal addressed peer review, uncertainty, and data quality. This will encourage research that will assist with the Agency's mission that has to comply with the new data integrity act. Maney said there are two reasons for the criteria. One is to be used by the authors as they prepare the paper so that they know quality will be considered. It reinforces the quality system.

Pohland thinks there's no problem with setting out this criteria; STAA should be more formal about this because it is now a legal issue. Despite all EPA's affirmations he doesn't think some of the people know what is talked about when people talk about Quality.

Cory-Schlecta does not agree and Buckley says there is a down-side to the authors of another burden. Cory-Slechta asked what would the author have to add to the paper.

Gilbert suggested that an item be added to the nomination form relating to, documentation of QA/QC on experimental design because many journals limit room for discussion of quality, so the form might be a good place Cory-Slechta said they had tried to cut back on the form, but the Panel could add to it. . Lanza suggested it could be added to 3A. Newman suggested that QA/QC experimental design be added to 3A. Lanza agreed. Maney advocated the addition of a related phrase to the evaluation criteria as well.

**ACTION:** After a vote, the Panel agreed the following phrase should be added to the evaluation criteria and section 3A on the form, "compliance with the Agency's Quality System for QA/QC and rigor of experimental design" .

10. Discussion of redundancy between Level III and HM.

After a brief discussion the Panel agreed that things should go on as they are and no further action was needed.

11. Other discussions

Multiple Papers

There was discussion about multiple submissions by the same author (OK) and multiple papers (up to 3) in a single submission. No changes were proposed

Younger Scientists

Buckley thought the Panel might focus on younger scientists. He thinks STAA does well for established scientists. He wondered if there might be a way to encourage younger, newer investigators who probably get lost in this process. Pohland thinks this is about mentoring. Cory-Slechta thinks a Young Investigator Award might be a lot of work, but could be worthwhile. Chien said most well-known scientists have

everything, but for the younger ones, support and recognition is really important. Dupont has a Young Investigator award. Newman said this is different than a young investigator team. Pohland said we could cite papers where young investigators exist, but EPA might have to figure out the award program. No action was taken.

The Panel finished its discussion of these items, then the DFO proposed to draft a report using the final scores determined by the Panel and last year's report as a model. She would then circulate the report to the Panel for approval. When approved by the Panel, it would be forwarded to the Executive Committee for approval and transmittal to the Administrator.

The DFO will also try to obtain answers to some of the questions raised by the Panel on Thursday and circulate that information to the Panel. The Panel may meeting by conference call before the next review cycle to consider steps relating to a possible Quarter Century report.

The Panel agreed to these proposals.

After thanking the members for their efforts, Dr. Cory-Slechta adjourned the meeting about noon.

Respectfully Submitted:

Certified as True:

/signed/

Ms. Kathleen White  
Designated Federal Official  
Environmental Engineering Committee

/signed/

Dr. Deborah Cory-Slechta, Chair

**Attachments** (paper, not electronic)

1. Agenda for the meeting
2. Committee roster
3. Biosketches
4. Federal Register Notices
5. List of papers and authors
6. Public Comment
7. Email approving minutes