

The Honorable Gina McCarthy
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Subject: SAB Recommendations for EPA's FY2013 Scientific and Technological
Achievement Awards

Dear Administrator McCarthy:

The EPA Science Advisory Board (SAB) is pleased to transmit its recommendations for the EPA's FY 2013 Scientific and Technological Achievement Awards (STAA). The STAA program was established by the agency in 1980 to recognize EPA employees who have made outstanding contributions to the advancement of science and technology through their publications in peer-reviewed literature or books. The SAB has been asked by EPA's Office of Research and Development to review EPA's nominated scientific publications and make recommendations for awards. We are pleased to continue to play an important role in the STAA program.

This year, the EPA submitted a total of 105 nominations comprised of 166 publications in 14 science and technology categories. Due to budgetary constraints, the SAB was informed that the 2013 STAA competition is for honorary awards with certificates only as no monetary awards will be provided to authors receiving STAA awards in 2013. The SAB excluded two nominations from consideration since they did not meet the eligibility criteria. Of the 103 remaining nominations, the SAB recommends no nominations for Level I, the highest award; 8 for Level II; 27 for Level III, and 38 for Honorable Mention. The SAB's recommendations are provided in the enclosed appendices.

Overall, the SAB commends the agency for its superior research publications. The SAB concludes that the 2013 STAA nominations are of very good quality. However, none of this year's nominations met the strict criteria for the highest level award. The SAB finds that this is not an aberration of the review process, since the same review criteria were applied this year as in previous years. Since there are very few Level I awards granted in any year, the SAB does not find this an issue for concern and assures the EPA that its scientists are doing high quality work that has maximal public and environmental health benefits. To encourage EPA staff to publish high quality scientific research, the SAB recommends that the agency enhance the process for publicizing the criteria for and results of the STAA program both internally throughout EPA and externally throughout the scientific community. The SAB also recommends that the EPA significantly shorten the time between receiving the SAB recommendations for STAA recognition and notifying award recipients.

Based on the SAB's review of the 2013 STAA nominations, it is clear that the EPA is doing important research, and the research nominated for STAA awards represents the best of this research. EPA's *STAA Nomination Procedures and Guidelines* limits nominations for STAA awards to publications within the previous three years. The committee finds that it often takes time between when research is published and when benefits can be fully realized. Such benefits include whether the research has had a significant

impact towards EPA's mission, which is one criterion for a STAA award. The SAB recommends that EPA consider developing a separate awards program to recognize EPA research no longer eligible for the STAA award program that is demonstrated to have had a significant impact over extended time towards EPA's mission.

The SAB appreciates the agency's implementation of most SAB recommendations from the last several years for improving the nomination procedures and administration of the STAA program. The SAB recommends that the EPA implement the following activities to further strengthen the STAA program and facilitate the SAB review of future STAA nominations:

- Disallow nominations of works published by standards-setting organizations such as the American Society for Testing and Materials International (ASTM).
- Ensure that book chapters or papers that are published in non-traditional sources (e.g., not in established journals) meet the same STAA program standards of peer review as for established journals.
- Ensure that all nominations separately list all publication(s) that were nominated for STAA award over the previous five years, sorted by current year nominated authors.
- Ensure that all nominations comprised of more than one publication include a comprehensive discussion on the link between such publications.
- Ensure that all nominations include relevant supplemental materials that support how the research was conducted, such as information on sample preparation or derivations of equations.
- Ensure that all submitted nomination documents are reproduced in a manner to include decipherable, clear and legible text in the manuscript and associated figures and tables using high-resolution PDF.
- Ensure that the list of nominations includes accurate information on the relative contribution of EPA authors towards each nomination.

The SAB notes that technology is allowing scientists to disseminate their work in different forms than traditional print journals. The SAB encourages the agency's scientists to consider alternative venues such as videos and other non-traditional publication techniques when such techniques allow scientists and engineers to present their work in a clearer or more actionable fashion, or to reach broader audiences. However, these non-traditional publications still will need to be peer reviewed to ensure that the science is credible.

The SAB applauds the EPA's public recognition of the scientific work of EPA scientists and engineers that is published in the peer-reviewed literature. Thank you for providing the SAB with the opportunity to assist the agency with this important program. The SAB looks forward to reviewing the FY 2014 STAA nominations.

Sincerely,

Dr. David T. Allen, Chair
EPA Science Advisory Board

Dr. George Daston, Chair
SAB Scientific and Technological
Achievement Awards Committee

NOTICE

This report has been written as part of the activities of the EPA Science Advisory Board, a public advisory group providing extramural scientific information and advice to the Administrator and other officials of the Environmental Protection Agency. The Board is structured to provide balanced, expert assessment of scientific matters related to the problems facing the Agency. This report has not been reviewed for approval by the Agency and, hence, the contents of this report do not necessarily represent the views and policies of the Environmental Protection Agency, nor of other agencies in the Executive Branch of the Federal government, nor does mention of trade names or commercial products constitute a recommendation for use. Reports of the EPA Science Advisory Board are posted on the EPA website at <http://www.epa.gov/sab>.

**U.S. Environmental Protection Agency
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**U.S. Environmental Protection Agency
Science Advisory Board**

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1. BACKGROUND

EPA's Scientific and Technological Achievement Awards program (STAA) was established in 1980 to recognize the agency's scientists and engineers who published their technical work in the peer-reviewed literature. The STAA program is administered and managed by the EPA Office of Research and Development (ORD). Each year, the EPA Science Advisory Board (SAB) has been asked to review the EPA's nominated scientific publications and make recommendations for awards. The SAB was charged to review nominations and provide recommendations for each nomination in consideration of the EPA's criteria for STAA awards. The EPA announced the call for nominations for the 2013 STAA program to senior managers and employees in January 2013 (Appendix A). ORD screened nominations for conformance with EPA's *STAA Nomination Procedures and Guidelines*. The Guidelines describe the award levels, eligibility criteria, and the award criteria. In July 2013, ORD submitted to the SAB Staff Office 105 nominations for 2013 STAA awards in 14 possible science and technology categories.

The EPA's criteria for STAA Program awards are as follows:

- Level I awards are for nominees who have accomplished an exceptionally high-quality research or technological effort. The nomination should recognize the creation or general revision of a scientific or technological principle or procedure, or a highly significant improvement in the value of a device, activity, program, or service to the public. It must be at least of national significance or have high impact on a broad area of science/technology. The nomination must be of far reaching consequences and recognizable as a major scientific/technological achievement within its discipline or field of study.
- Level II awards are for nominees who have accomplished a notably excellent research or technological effort that has qualities and values similar to, but to a lesser degree, than those described under Level I. It must have timely consequences and contribute as an important scientific/technological achievement within its discipline or field of study.
- Level III awards are for nominees who have accomplished an unusually notable research or technological effort. The nomination can be for a substantial revision or modification of a scientific/technological principle or procedure, or an important improvement to the value of a device, activity, program, or service to the public. It must relate to a mission or organizational component of the EPA, or significantly affect a relevant area of science/technology.
- Honorable Mention is for nominations which are noteworthy but which do not warrant a Level I, II or III award. Honorable Mention applies to nominations that: (1) may not quite reach the level described for a Level III award; (2) show a promising area of research that the SAB wants to encourage; or (3) show an area of research that the SAB believes is too preliminary to warrant an award recommendation at this time.

2. SAB REVIEW PROCEDURE

The SAB Staff Office formed a new SAB STAA Committee in 2012 to annually review EPA's STAA nominations. The Committee members were invited to serve for a three-year term. The Committee was formed in accordance with the SAB process as described in the SAB 2002 publication, *Panel Formation Process: Immediate Steps to Improve Policies and Procedures* (EPA-SAB-EC-COM-02-003).

All EPA nominations and nomination evaluation criteria were provided to the SAB Committee in advance of the review meeting. The SAB review consisted of a two-step process: an initial review of each nomination, followed by a Committee discussion of all nominations. The initial review of each nomination was conducted by two or three members. Committee members provided their individual initial ratings of the nominations based on the EPA's award criteria as described in Section 1. The SAB STAA Committee met at a closed meeting on October 21-22, 2013, in Washington, DC. The meeting was closed to the public because the Committee discussions involved personnel matters, including the relative merits of various employees and their respective work, the disclosure of which would be a clearly unwarranted invasion of personal privacy and, therefore, protected from disclosure by section (c)(6) of the Government in the Sunshine Act, 5 U.S.C. 552b(c)(6). Committee members discussed all nominations (see Table 1), and reached consensus on the recommendations for awards. To avoid an appearance of a lack of impartiality, some members were asked to be recused from the Committee deliberations on selected nominations. The Committee also discussed administrative recommendations for improving the STAA nomination process.

Table 1. 2013 STAA Nominations by Topic Category

Topic	Number of Nominations Submitted to SAB
Control Systems and Technology	2 ^a
Ecological Research	9
Energy and the Environment	1
Environmental Policy and Decisionmaking Studies	4
Health Effects Research and Human Health Risk Assessment	29
Homeland Security	4
Industry and the Environment	4
Integrated Risk Assessment	2
Monitoring and Measurement Methods	7
Other Environmental Research	10
Review Articles	11 ^b
Risk Management and Ecosystem Restoration	3
Sustainability and Innovation	7
Transport and Fate	12
TOTAL	105

^a One submitted nomination included a publication from a standards-setting organization. The SAB excluded this nomination because it is difficult to ascribe and ascertain authorship to publications from standards-setting organizations.

^b One nomination intended that the Committee review a Special Issue publication for consideration of STAA award, but the Special Issue publication was not submitted within the nomination package for review. The SAB excluded this nomination because it did not meet the eligibility requirements (i.e., nomination packages must include the publications that are nominated for award).

3. AWARD RECOMMENDATIONS

Table 2 summarizes the awards by year since 2003, including the recommendations for 2013. For 2013, the Committee recommended no nominations for Level I, the highest award, 8 for Level II, 27 for Level III, and 38 for Honorable Mention. Appendix B lists the recommended awards for Level II and III, and nominations that deserve an Honorable Mention. The final rankings were agreed to by consensus at the STAA Committee meeting on October 21-22, 2013. One award was based upon a yes/no vote by the Committee members. Table 3 summarizes the distribution of 2013 award recommendations among categories.

Table 2. Comparison of Award Recommendations over Time

Award Level	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
Nominations Reviewed	136	146	110	90	140	130	109	121	130	104	103 ^a
Level I	7 (5%)	6 (4%)	3 (3%)	5 (6%)	5 (4%)	5 (4%)	3 (3%)	5 (4%)	3 (2%)	4 (4%)	0
Level II	18 (13%)	13 (9%)	6 (5%)	11 (12%)	13 (9%)	16 (12%)	22 (20%)	14 (12%)	13 (10%)	10 (10%)	8 (8%)
Level III	29 (21%)	32 (22%)	30 (27%)	29 (32%)	37 (26%)	30 (21%)	31 (28%)	42 (35%)	35 (27%)	29 (28%)	27 (26%)
Honorable Mention	33 (24%)	37 (25%)	31 (28%)	26 (29%)	45 (32%)	43 (33%)	25 (23%)	33 (27%)	44 (34%)	36 (35%)	38 (37%)
Not Recommended	49 (36%)	58 (40%)	40 (36%)	19 (21%)	40 (29%)	36 (28%)	28 (26%)	27 (22%)	35 (27%)	25 (24%)	28 (27%)

^a Two nominations were considered ineligible for consideration by the SAB (see Table 1 and footnotes to that table).

Table 3. Summary Number of Award Recommendations by Category for FY2013

Nomination Categories	Total Nominations	Award Levels				Honorable Mention
		I	II	III	Total	
Control Systems and Technology	1	0	0	0	0	0
Ecological Research	9	0	1	2	3	4
Energy and the Environment	1	0	0	0	0	1
Environmental Policy and Decision making Studies	4	0	1	0	1	3
Health Effects Research and Human Health Risk Assessment	29	0	2	11	13	6
Homeland Security	4	0	0	0	0	2
Industry and the Environment	4	0	0	1	1	3
Integrated Risk Assessment	2	0	0	1	1	0
Monitoring and Measurement Methods	7	0	1	2	3	1
Other Environmental Research	10	0	1	4	5	2
Review Articles	10	0	1	2	3	3
Risk Management and Ecosystem Restoration	3	0	0	0	0	1
Sustainability and Innovation	7	0	1	2	3	2
Transport and Fate	12	0	0	2	2	9
TOTALS:	103	0	8	27	35	38

4. ADMINISTRATIVE RECOMMENDATIONS

The SAB appreciates the EPA's implementation of the recommendations from last year's SAB report to the Administrator that improve the nomination process and enhance the integrity of the program. In particular, the SAB concludes that almost all of the 2013 nominations adhered to existing STAA program guidelines.

The SAB has the following recommendations to further strengthen the STAA program in future years:

Additional Requirements for Nomination Form:

- *For each nominated author, separately list all publication(s) from that author that were nominated and the associated outcome for STAA award(s) over the previous five years.* Currently, the STAA nomination form does not require submission of a list of publications that were previously nominated for STAA awards, sorted by the authors of the current nomination. The SAB recommends that this list be required within the submitted nomination, since this information will assist the Committee in assessing the differences between such publications.
- *Disallow submission of nominations from standards-setting organizations that develop standards through a committee process involving an intensive series of peer reviews.* Currently, the Criteria for Eligibility within the STAA Program's Nomination Procedures and Guidelines discourage but do not disallow the nomination of publications by standards-setting organizations such as the American Society for Testing and Materials International (ASTM), which develop standards through an intensive series of peer reviews. As noted in previous SAB recommendations, the EPA should disallow nomination of such publications since it is difficult to ascertain and ascribe authorship contribution.
- *Require that all relevant supplemental materials be included in the nomination package.* Currently, the Criteria for Eligibility within the STAA Program's Nomination Procedures and Guidelines recommend that any supplemental information sent to journals should be included within the nomination; however, the STAA nomination form does not require submission of this supplemental information. This supplemental information frequently provides useful context on the quality and innovativeness of the research (e.g., information on sample preparation or derivations of equations) and the potential consequences of the research within its discipline or field of study. To ensure that nominations include such supplemental information, the STAA nomination form should be revised to require submission of all supplemental information sent to journals by authors of publication(s) included within each nomination. In addition, certain information generated by the authors and referenced in nominated publications that would assist the SAB in understanding the scientific significance of the publication (such as algorithms, or R scripts used to develop statistical computing and graphics programs) should be included within the nomination's supplemental information.
- *Ensure that nominated book chapters and papers that are published in non-traditional sources are peer reviewed.* As noted in previous SAB recommendations, the nature and extent of peer review conducted on nominated book chapters is frequently uncertain. The SAB recommends that the EPA revise the STAA eligibility criteria for nominations of book chapters to require that

only book chapters that have undergone external peer review arranged by publishers involving anonymous referees may be nominated for a STAA award. In addition, the EPA should ensure that papers that are published in non-traditional sources (e.g., not in established journals) meet the same STAA program standards of peer review as for established journals.

Assurance of Completeness and Clarity of Nomination Package:

- *Each nomination should discuss the relationship between publications within nominations comprised of multiple publications.* Currently, the STAA nomination form requires that a description be provided of how the nomination's publication(s) differ from the author(s) publication(s) that were previously nominated for STAA award over the last 5 years. However, several nominations for 2013 STAA recognition did not mention or comprehensively discuss the link between subject matter for the different publications submitted as part of a single nomination. The SAB encourages the EPA to ensure that the justifications for nominations comprising more than one publication include a comprehensive discussion on the relationship between publications within such nominations.
- *Review all STAA nominations documents for visual clarity and provide information on relative contribution of EPA authors towards each nomination.* Some STAA nomination packages contain text that is unclear and numbers that cannot be differentiated. The EPA should ensure that all submitted nomination documents are reproduced in a manner to include visually decipherable, clear and legible text in the manuscript and associated figures and tables using high-resolution PDF. The EPA also should ensure that the list of STAA nominations provided to the SAB contains accurate information regarding the relative contribution of EPA authors towards each nomination.

Timeliness of Issuing STAA Awards:

- *Shorten the time between the EPA's annual receipt of SAB recommendations for STAA recognition and the EPA's notifications to award recipients.* The SAB is concerned that a one-year time lag occurred between EPA's receipt of 2012 SAB recommendations for STAA recognition and EPA's notifications to 2012 STAA award recipients. The SAB recommends that EPA shorten the time between receiving the SAB recommendations for STAA recognition and notifying award recipients.

APPENDIX A - CALL FOR NOMINATIONS FOR THE 2013 STAA PROGRAM

January 29, 2013

MEMORANDUM

SUBJECT: The 2013 Scientific and Technological Achievement Awards (STAA) Program

FROM: Lek G. Kadeli
Principal Deputy Assistant Administrator (8181R)

TO: Assistant Administrators
Associate Administrators
Regional Administrators

It is a pleasure to announce this year's call for nominations for the 2013 Scientific and Technological Achievement Awards (STAA) program. STAA is an Agency-wide competition, judged by the Science Advisory Board (SAB), which recognizes outstanding published scientific and technical papers by the Agency's staff. This year's nominations will be accepted via electronic submission to nominations.STAA@epa.gov.

Attached are (1) nomination procedures and guidelines, (2) review schedule, and (3) nomination form. Official 2013 nomination forms are available for your convenience in MS Word and screen fillable Portable Document Format (PDF) at <http://epa.gov/ncer/staa/>. All nominations must be received no later than midnight ET Thursday, February 28, 2013. Instructions for completion and electronic submission of nomination packages are attached. Should questions arise, please contact Ben Packard at (703) 347-8087 or packard.benjamin@epa.gov.

cc: EPA Science Advisory Board
EPA Program Offices
EPA Regional Offices
ORD Center/Laboratory Directors

Attachments

January 29, 2013

EPA SEEKING APPLICATIONS FOR 2013 STAA AWARDS

MEMORANDUM

SUBJECT: The 2012 Scientific and Technological Achievement Awards (STAA) Program

FROM: Lek G. Kadeli
Principal Deputy Assistant Administrator

TO: All EPA Employees

I am pleased to issue this year's call for nominations for the EPA's prestigious 2012 Scientific and Technological Achievement Awards (STAA). Each year, EPA recognizes outstanding papers written by the Agency's staff and published in scientific and technical journals. STAA is open to all EPA employees. Nominations are judged by the EPA's Science Advisory Board (SAB), and managed by the Office of Research and Development.

Nominations can be submitted in the following categories:

- Control Systems and Technology
- Ecological Research
- Health Effects Research and Human Health Risk Assessment
- Monitoring and Measurement Methods
- Transport and Fate
- Review Articles
- Risk Management and Ecosystem Restoration
- Integrated Risk Assessment
- Environmental Policy and Decision-Making Studies
- Homeland Security
- Industry and the Environment
- Energy and the Environment
- Sustainability and Innovation
- Other Environmental Research

STAA winners are eligible for monetary awards.

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This year's nominations will be accepted via electronic submission to nominations.STAA@epa.gov. You can find the nomination forms and guidelines and additional information about the STAA program at www.epa.gov/ncer/staa/. Nominations will be accepted until midnight ET on Thursday, February 28, 2013. Should questions arise, please contact Ben Packard at (703) 347-8087 or packard.benjamin@epa.gov.

APPENDIX B - NOMINATIONS RECOMMENDED FOR STAA AWARDS

Note: In order to maintain the confidentiality of the awards recommendations, Appendix B which contains the list of SAB recommendations for 2013 STAA Program Awards is not included in this review draft. The list will be appended to the final letter to the Administrator after completion of the quality review by the chartered SAB.