

September 30, 1999

EPA-SAB-EC-99-017

Honorable Carol M. Browner
Administrator
U.S. Environmental Protection Agency
401 M Street, SW
Washington, DC 20460

Subject: Science Advisory Board (SAB) Award Recommendations for the 1998
Scientific and Technological Achievement Awards (STAA) Program

Dear Ms. Browner:

The Science Advisory Board's (SAB) Scientific and Technological Achievement Awards (STAA) Subcommittee has completed its review of the nominations submitted by the Agency for this year's (1998) awards program. As you are aware, the STAA program is sponsored by the Office of Research and Development (ORD), which continues to do a creditable job in soliciting and assembling these nominations. Each year (except for 1995 during the government-wide shutdown) the Board convenes a special panel to review nominated papers published by Agency researchers. Our recommendations for awards and further improvements in the STAA program are discussed in the enclosed report.

The Agency solicited nominations in eleven categories this year: Control Systems & Technology (CS), Ecology & Ecosystem Risk Assessment (EC), Health Effects & Health Risk Assessment (HE), Monitoring & Measurement Methods (MM), Transport & Fate (TF), Review Articles (RA), Risk Management and Policy Formulation (RM), Integrated Risk Management (IR), Social Science Research (SS), Environmental Education (EE), and Environmental Trends for Drivers of Future Risk (ET). Agency scientists and engineers submitted a total of 94 nominations from among the first nine categories. Nominations were not submitted for the last two categories this year (EE, and ET). During its review, the Subcommittee combined several individual nominations and re-categorized several others, reducing the final number of nominations to 89 of which 32 were recommended for an award.

During its September 30, 1998 peer review of this report from its *ad hoc* STAA Subcommittee, the SAB's Executive Committee recommended that the Agency consider adding a twelfth nomination category -- Exposure Assessment. Clearly some of the nominations submitted

this year, as well as in previous years', have addressed exposure assessment in some form. In light of the importance of this type of research to the Agency, it seems appropriate to highlight this work with its own category.

Recommendations are included for awards in seven of the nine categories for which nominations were submitted. Several nominations were submitted in the Social Science Research and Integrated Risk Assessment categories, and while awards were not recommended for these nominations, the Subcommittee was encouraged to see nominations in these categories and hopes to see additional nominations in the future. In addition, the Subcommittee is recommending ten papers for Honorable Mention. The authors recommended for awards this year are from 14 research laboratories and centers within the Office of Research and Development, Office of Air and Radiation, Office of Water, Office of Pollution Prevention and Toxics, Office of Solid Waste and Emergency Response, and Regions II and VII.

The Subcommittee continues to encourage the Agency to nominate peer-reviewed papers from **all programs and areas of scientific and technological research** because scientific and technological achievements should not be limited to ORD or to EPA laboratories. The process of publishing EPA scientific findings in peer reviewed journals enhances the rigor of the science and the reputation of the Agency and its programs. Managers should encourage and provide the opportunities for their program scientists and engineers to conduct challenging investigations and publish the data and technical analysis which address aspects of the Agency's policies and regulations.

As we have pointed out in each of our recent reports, the Subcommittee noted with great disappointment, the lack of a significant number of nominations from Program areas other than ORD. With the exception of two nominations from OPPT, all of the nominations submitted this year were from ORD. Nevertheless, the Subcommittee commends the staff of ORD for administering the STAA program. The ORD staff has made significant improvements in the program and in the nomination packages which have facilitated the Subcommittee's review procedures. The Subcommittee strongly recommends that ORD management continue to solicit participation of other Agency scientists and engineers as part of the Agency's goals to improve its scientific underpinnings and peer review of regulatory science. We recommend that ORD continue to announce this program early and that additional efforts be made to advertise it more broadly next year to ensure greater participation by all program areas of the Agency.

The Subcommittee continues to feel that the STAA program is an important mechanism for recognizing and promoting high quality, peer-reviewed work published in top scientific and technological journals. This is even more critical as Agency programs continue to improve their overall commitment to, and compliance with your Peer Review Policy and the Agency's Peer Review Handbook. Furthermore, it supports your emphasis on sound science forming the basis for sound decisions.

We are pleased to have participated in this process once again and believe it is appropriate for the Board to continue this annual review function. We would appreciate being

informed of the final disposition of awards. We look forward to serving the Agency again in this important activity.

Sincerely,

/signed/
Dr. Joan Daisey, Chair
Science Advisory Board

/signed/
Dr. C. H. Ward, Chair
Scientific and Technological Achievement
Awards Subcommittee
Science Advisory Board

NOTICE

This report has been written as part of the activities of the 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 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.

Distribution and Availability: This Science Advisory Board report is provided to the EPA Administrator, senior Agency management, appropriate program staff, interested members of the public, and is posted on the SAB website (www.epa.gov/sab). Information on its availability is also provided in the SAB's monthly newsletter (*Happenings at the Science Advisory Board*). Additional copies and further information are available from the SAB Staff.

ABSTRACT

This report represents the conclusions and recommendations of the U.S. Environmental Protection Agency's Science Advisory Board regarding the 1998 EPA Scientific and Technological Achievement Awards (STAA) Program. The STAA Program is an Agency-wide competition to promote and recognize scientific and technological achievements by EPA employees, fostering a greater exposure of EPA research to the public. The Program was initiated in 1980 and is managed by the Office of Research and Development (ORD).

The Agency submitted for review 94 nominations from the first nine of the eleven award categories this year (Control Systems & Technology, Ecology & Ecosystem Risk Assessment, Health Effects & Health Risk Assessment, Monitoring & Measurement Methods, Transport & Fate, Review Articles, Risk Management and Policy Formulation, Integrated Risk Management, Social Science Research, Environmental Education, and Environmental Trends for Drivers of Future Risk). After review, the STAA Subcommittee of the Science Advisory Board revised the number of nominations to 89. Of these, the Subcommittee recommended 32 nominations (36 percent of the nominations) for awards at three levels and also recommended that ten additional papers be recognized with Honorable Mention. The Subcommittee recommended awards for 30 nominations submitted by 14 research laboratories and centers within the Office of Research and Development and two nominations submitted by the Office of Pollution Prevention and Toxics. The Subcommittee encouraged the Agency to continue support for the STAA program as a mechanism for recognizing and promoting high quality research in support of the Agency's mission.

KEY WORDS: Awards, Technology, Scientific Achievements, Peer-Review

**ENVIRONMENTAL PROTECTION AGENCY
SCIENCE ADVISORY BOARD
1998 SCIENTIFIC AND TECHNOLOGICAL
ACHIEVEMENT AWARDS SUBCOMMITTEE ROSTER**

July 21-22, 1999 Meeting

CHAIR

Dr. C. H. (Herb) Ward, Foyt Family Chair of Engineering, Director, Energy & Environmental Systems Institute, Professor, Departments of Environmental Science & Engineering and Ecology & Evolutionary Biology, Rice University, Houston, TX

MEMBERS/CONSULTANTS ATTENDING THE MEETING

Dr. Roger Cochran, Staff Toxicologist, Medical Toxicology Branch, Department of Pesticide Regulation, California EPA, Sacramento, CA

Mr. Richard A. Conway, Senior Corporate Fellow (Retired), Union Carbide Corp., Charleston, WV

Dr. Deborah Cory-Slechta, Professor, Department of Neurobiology and Anatomy, and Chair, Department of Environmental Medicine, University of Rochester Medical School, Rochester, NY

Dr. Richard T. Di Giulio, Professor, Nicholas School of the Environment, Duke University, Durham, NC

Dr. Allan Legge, President, Biosphere Solutions, Calgary, Alberta, Canada

Dr. William Smith, Professor, School of Forestry and Environmental Studies, Yale University, New Haven, CT

Dr. Michael Trehy, Senior Research Specialist, Solutia Inc., St. Louis, MO

Dr. Judith S. Weis, Professor, Department of Biological Sciences, Rutgers University, Newark, NJ

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1. EXECUTIVE SUMMARY

The Scientific and Technological Achievement Awards (STAA) Subcommittee of the Science Advisory Board (SAB) reviewed and evaluated the 94 nominations for the 1998 program that were submitted by EPA research laboratory directors and program office directors. After review, the Subcommittee revised the number of nominations to 89 (including over 100 individual scientific and technical papers). The Subcommittee met in Washington, DC, on July 21-22, 1999, to determine award recommendations.

The STAA review program is a long-standing partnership between the Agency and the Science Advisory Board. Each year since 1980 Agency scientists and engineers submit nominated scientific and technological papers through an internal Agency review process managed by the Office of Research and Development (ORD). (Note: The Agency did not conduct the STAA Program during 1995 when there was a government-wide shutdown.) This review process ensures that the best scientific papers are submitted to the SAB for evaluation in the awards process. The SAB convenes an experienced group of scientists and engineers who meet in a closed meeting to review and evaluate the nominations. The SAB review panel produces a set of award recommendations which ORD uses in preparing the actual awards.

This year, the Subcommittee recommended 32 nominations for awards and recommended that ten additional papers be recognized with Honorable Mention. The Subcommittee applied the evaluation criteria evenly across all nomination categories, without attempting to ensure equal numbers or percentages of awards in each category. The Subcommittee recommended awards for 30 nominations from 14 research laboratories and centers within the Office of Research and Development, and two nominations submitted by the Office of Pollution Prevention and Toxics. Authors honored by the recommendations include representatives of 14 research laboratories and centers within the Office of Research and Development, Office of Air and Radiation, Office of Water, Office of Pollution Prevention and Toxics, Office of Solid Waste and Emergency Response, and Regions II and VII.

The Subcommittee recommends that additional attention be paid to providing opportunities for EPA's scientists, engineers, and other technical personnel to conduct challenging, soundly based studies that result in peer-reviewed papers having high impact.

2. INTRODUCTION

2.1 Request for Science Advisory Board (SAB) Review

At the request of the Office of Research and Development (ORD), the Science Advisory Board convened a subcommittee to review and evaluate scientific and technological papers published in peer-reviewed journals by EPA authors and nominated for the 1998 EPA Scientific and Technological Achievement Awards (STAA) program. The STAA Subcommittee was asked to evaluate nominated papers for awards based on the rules developed by ORD. In January 1999, the Office of Research and Development (ORD) provided the SAB with copies of 94 nominations (later reduced to 89 nominations by the Subcommittee). The Subcommittee used the 1998 STAA Nomination Procedures and Guidelines, which describes the award levels, eligibility criteria (including the minimum EPA contribution and employer status of the principal author), and the criteria the SAB should use to evaluate the nominations. Although there are eleven nomination categories, ORD only received nominations in nine categories this year. ORD grouped the papers into these nine categories of science and technology¹, and screened the papers for conformance with the nomination guidelines. No nominations were submitted in the other two categories this year.²

As described in the 1998 STAA Nomination Procedures and Guidelines, the SAB was asked to recommend papers for each of three Levels of Award.

- a) Level I awards - are for nominees who have accomplished an exceptionally high-quality research or technological effort with national significance. These awards recognize the initiation or general revision of scientific/technological principles or procedures, or 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. The cash award for this level is \$5,000 divided among the EPA eligible authors, based on their individual level of effort as defined in the nomination.
- b) 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

¹ These categories are: Control Systems & Technology (CS), Ecology & Ecosystem Risk Assessment (EC), Health Effects & Health Risk Assessment (HE), Monitoring & Measurement Methods (MM), Transport & Fate (TF), Review Articles (RA), Risk Management and Policy Formulation (RM), Social Science Research, and Integrated Risk Management (IR).

² These categories are: Environmental Education (EE) and Environmental Trends for Drivers of Future Risk (ET).

within its discipline or field of study. The cash award for this level is \$2,500 divided among the EPA eligible authors, based on their individual level of effort as defined in the nomination.

- c) 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. Research for this award must relate to a mission or organizational component of the EPA, or significantly affect a relevant area of science/technology. The cash award for this level is \$1,000 divided among the EPA eligible authors, based on their individual level of effort as defined in the nomination.

- d) Honorable Mention - The Subcommittee has also added a fourth non-cash level award 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 Subcommittee wants to encourage; or (3) show an area of research that the Subcommittees feels is too preliminary to warrant an award recommendation (yet).

2.2 Subcommittee Review Procedures

The Review Panel was convened as an *ad hoc* subcommittee of the Science Advisory Board (SAB). Membership included a significant number of returning STAA panelists; consequently, the level of experience with the process matched the level of scientific and technical expertise. In addition, many panelists hold editorial positions on highly regarded scientific journals.

Copies of all nominations/papers and the award program guidelines and nomination evaluation criteria were provided to Subcommittee members in advance of the review meeting. Subcommittee members selected nominations/papers to review based on their expertise, being sure to select, when appropriate, papers from across all nomination categories. Typically, each member choose at least 30 nominations to review. Members were encouraged to include nominations from areas outside of their own expertise as well as areas with which they were more familiar. As part of the evaluation, Subcommittee members were asked to rank their own expertise in the field of science and technology addressed by each nomination they selected for review. These rankings were considered by the Subcommittee during the evaluation of each nomination. Each nomination was reviewed by at least two (and usually more - often by five or six) qualified Subcommittee members and then presented to the full Subcommittee and discussed during the review and evaluation meeting that was held in Washington, DC on July 21-22, 1999. Nominations judged to merit an award at some level were reviewed a second time by the Subcommittee, and in some cases, a third time, to ensure that a complete evaluation had been

made. Nominations that were initially not recommended for an award were also re-reviewed to determine if the nomination might merit either an Honorable Mention or numerical award.

In reviewing the nominations, the Subcommittee members qualitatively considered evaluation criteria factors such as: the overall impact of the nominated paper(s) on scientific knowledge or technology relevant to environmental issues; the level of effort; the creativity, originality, initiative, and problem solving exhibited by the researchers; the beneficial impacts of the accomplishments and the recognition of the results outside the Agency; the extent to which an Agency function, mission, program, activity, or service is improved; and the nature and extent of the peer review, including the stature of the journal.³

Prior to the review and evaluation meeting, Subcommittee members forwarded the results of their review to the Designated Federal Officer (DFO) for the Subcommittee. The initial ranking along with the self-professed expertise of each reviewer for that particular nomination was compiled by the DFO in a tabular format (see Table I for an example) and then used at the review and evaluation meeting to help focus the discussion on each individual nomination. Initial individual rankings were subject to change based on discussions at the review and evaluation meeting. The final ranking agreed to at that meeting is a consensus ranking. The

Table I - Example of how Initial Individual Reviewer Rankings are Compiled
(Data for illustration purposes only)

Nomination Number	Title of Nomination	Reviewer			Final Ranking (at meeting)
		Name	Expertise *	Initial Individual Ranking	
HE9999	Health Assessment: Trinitrochicken wire	Dr. Smith	2	NR	NR
		Dr. Jones	3	III	
		Dr. Adams	4	NR	
EC9999	Ecological Impacts of Trinitrochicken wire	Dr. Smith	4	NR	III
		Dr. Jones	3	III	
		Dr. Adams	2	III	
		Dr. Williams	3	III	
RA9999	Trinitrochicken wire - A Review	Dr. Black	3	I	I
		Dr. Green	4	I	
		Dr. Jackson	2	II	
		Dr. White	1	NR	

* Expertise levels are rated as follows: 1 = not related to major discipline of reviewer; 2 = general knowledge of research area; 3 = general knowledge of active research; and 4 = specific area of active research. NR = Not Recommended for an award.

³ These criteria are discussed more fully in section VII of the 1998 Nomination Procedures and Guidelines provided to the Subcommittee by the Agency.

examples given in Table I are illustrative. All nominations receiving a recommendation for a Level I, II or III award or an Honorable Mention are listed in Appendix B.

The Subcommittee met on July 21-22, 1999, in Washington, DC in a closed session due to the discussions of individual performance and potential cash awards. Consistent with the requirements of the Federal Advisory Committee Act (Public Law 92-463) 5 U.S.C. App.2, and sections 552(b)(2) and (b)(6) of the Administrative Procedure Act, 5 U.S.C. 552(b)(2) and 552(b)(6), this closed meeting was announced in a Federal Register⁴ notice signed by the EPA Administrator. All Subcommittee members were present at the meeting except for one who participated via teleconference. The Subcommittee developed preliminary ratings for papers in each category, including discussion of each nominated paper. The Subcommittee made note of papers that had been incorrectly categorized, so that the final report recommendations would accurately reflect the subject areas of the nominated papers (see Appendix A). After completing all preliminary evaluations, the Subcommittee revisited the recommendations category by category to resolve any final issues and ensure consistency in applying the award criteria across categories.

This Subcommittee report was reviewed and approved by the SAB's Executive Committee (EC) via mail review. For that review, the Subcommittee report, less the actual award recommendations (Appendix B), was made available to the EC and the interested public.

⁴ 64(125) Federal Register 35150, June 30, 1999.

3. EVALUATION OF THE 1998 SCIENTIFIC AND TECHNOLOGICAL ACHIEVEMENT AWARD NOMINATIONS

3.1 General Findings of the Subcommittee

The Subcommittee felt that the overall quality of the papers nominated this year was not comparable to previous years. Hence, the Agency should view this report as a possible early warning that efforts are needed to improve the quality of its in-house research. The STAA program is an important mechanism for recognizing and promoting high quality, peer-reviewed work published in top scientific and technological journals. The STAA Program can also serve as a benchmark for the quality of the research produced by the Agency since the same metrics and level and breadth of expertise of reviewers (Subcommittee members) are used each year. The authors whose papers were recommended for awards this year represent 14 research laboratories and centers within the Office of Research and Development, Office of Air and Radiation, Office of Water, Office of Pollution Prevention and Toxics, Office of Solid Waste and Emergency Response, and Regions II and VII.

The Subcommittee recommends that ORD continue to request the submission of nominations early, and that ORD advertise the program more aggressively, so that Regional and Program offices have adequate time to prepare their nominations. The limited number of nominations from outside of ORD was again a disappointment to the Subcommittee; however, the increase to five nominations was an improvement over last year. While we recognize that most of the in-house research is conducted by ORD scientists in ORD laboratories, we want the submission process to encourage submissions from outside of ORD.

The Subcommittee also encourages the Agency to continue to broaden the scope of nominated papers and to promote multi-disciplinary research that directly supports risk management and policy decisions. In evaluating nominations for awards, the Subcommittee looked for papers with well-developed hypotheses, good sampling or experimental design, and where the theoretical basis is verified by field validation or through testing of a model. We also looked for innovative applications of theories from other disciplines and collaborations of interdisciplinary teams of scientists and engineers. In addition, the Subcommittee encourages the submission of nominations which address exposure assessment.

In order to evaluate papers that present incremental results in a series of published works, the Subcommittee recommends that the nomination guidelines prepared by ORD explicitly require discussion of related research published previously by the lead author(s), including information on any STAA awards given. When possible, and within the limitations suggested in Section 3.2a), nominations should include all papers in a series, providing they are within the time limit. This would allow a series of incremental studies to be evaluated for an award as a package.

Once again this year, the Subcommittee has recommended a paper in the Risk Management and Policy Formulation category for an award. The Subcommittee hopes to see more peer reviewed papers nominated in this category next year, as this is an important area of research for the Agency. In addition, one paper was submitted in the Integrated Risk Assessment category, and while an award was not recommended, the Subcommittee was encouraged to see a nomination in this category and hopes to see additional nominations in the future. The Subcommittee feels that the process of converting Agency policy analysis and the technical foundations of its rule making into scientific articles for peer review is essential to maintain the quality in its science. This is also an important way to improve the Agency's reputation for scientific achievement. Laboratory directors and program managers should encourage the authors of policy formulation papers and regulatory impact analyses to develop technical articles for peer reviewed literature.

The focus of nominated papers should be on investigation and the creation of new technology and scientific and technical knowledge and information, rather than the reporting and communication of existing information, such as describing environmental regulations or current methods for pollution control. While such papers are extremely valuable and important for the agency, and the articles may be well-written and effective, they do not really fit within the purview of achievements in science and technology. The STAA Program is designed to recognize accomplishments in science and technology, hence, nominations in these fields and others should be focused on the new and significant scientific knowledge developed by the Agency in these fields. Review articles with new and useful analysis and synthesis of existing information also are important; several were recognized this year, one of which was in the control system category.

Finally, the Subcommittee believes that the STAA program provides one view of the technical and scientific progress that the Agency is making in various areas of research. This year's activities represent strengths in a variety of technological assessments, analytical measurements, and in certain areas of human health effects research.

3.2 STAA Program Administrative Recommendations

The Subcommittee commends the staff of ORD for administering the STAA program. The staff has made significant improvements in the program and the nomination packages that have facilitated the Subcommittee's review procedures. The Subcommittee recommends that ORD management continue to solicit participation of other Agency scientists and engineers as part of the Agency's goals to improve its scientific underpinnings and peer review of regulatory science. The following recommendations are directed to the ORD staff and managers that work with the STAA program, and to the authors of the nominated papers. Some of these recommendations reiterate earlier recommendations of the Subcommittee, but are included here for emphasis.

- a) As we requested last year, nominations should not contain any more than three relevant papers (part of a set or series) to be included as part of the nomination. Where appropriate, additional materials may be included, such as copies of

previously published background work. We believe that this helped to streamline the process and we again encourage limiting each nomination to three relevant papers.

- b) Again, work that is nominated should be published within the past three years, although the work might actually have been completed within the past five years. (This is now reflected in the 1998 ORD STAA Program guidance and should continue.)
- c) Review articles (Category RA) should continue to include a synthesis and an analysis, not just a summary of relevant literature. This recommendation was also made by the Subcommittee last year. It is clear from the number of Review Articles that garnered awards this year (four out of the six submitted) that the quality of these papers has improved.
- d) Although a paper should stand on its own merits, work should be published in journals that are relevant to the field of work. Publishing sound scientific work in an inappropriate or second-rate journal weakens the nomination. In addition, peer review of conference or workshop proceedings or chapters in books is often considered less rigorous than the peer review process used by first-rate journals.
- e) Regarding the application form itself - the section on “Justification” has eight numbered sections for information relevant to the author or the nomination. In previous recommendations, we have suggested certain areas of emphasis and limitation for these sections. We now note that the prose is usually duplicative and is growing longer each year. In an effort to limit the time and effort expended on preparing the justification section and to make it more relevant for the Subcommittee review process, we suggest that the following information be used in the future (about one page total):
 - (1) The significance or impact of the research and its relevance to EPA’s mission; and
 - (2) Since such an interest has been taken concerning the Peer Review activities at EPA, and considering that EPA has an established Peer Review Policy and a Peer Review Handbook for guidance, the Subcommittee would like to see a strong statement that reflects the degree to which the nominated paper(s) have gone through internal and/or external peer review.
- f) To reduce privacy concerns, the Subcommittee requests that the nominations submitted for SAB review not contain social security numbers.

- g) The Subcommittee again noted that nominating laboratories and program offices appear to have different screening procedures for selecting nominations for the STAA program. The Subcommittee encourages ORD to provide guidance to all EPA laboratories and program offices regarding the criteria for selecting nominees to the STAA program.
- h) The Subcommittee recommends that the STAA nomination form include information on the total number of peer-reviewed publications produced by the nominating organization during the nomination year and during the preceding two years. The total number of publications screened for submission to the STAA program should also be identified along with the total number submitted. It was not clear to the Subcommittee if the nominations submitted to the SAB were a subset of all nominations received by ORD or if the SAB received all of the nominations to review.
- i) The suggested citations provided for many of the nominations need to reflect the value of the work to the Agency. Most of this year's submissions merely contained a statement that reflected the nature of the research without any indication of the value of the work. More attention needs to be given to this matter.
- j) Finally, the Subcommittee again urges the Agency to publicize the names of the award winning scientists and engineers and their papers both within the Agency and outside the Agency in a variety of ways. For example, the Agency should announce these winners by placing the title and abstract of their papers, along with the source of the paper, on the Agency's Website. The Agency should also develop press releases or letters from the Administrator that are targeted toward the journal that published the articles, professional society newsletters, and local newspapers in the vicinity of the scientist/engineer's research facility.

3.3 Award Recommendations

The EPA authors recommended for awards include scientists and engineers from 14 research laboratories and centers within the Office of Research and Development, Office of Air and Radiation, Office of Water, Office of Pollution Prevention and Toxics, Office of Solid Waste and Emergency Response, and Regions II and VII. While this may seem like a good representation across the Agency, only three nominations (two from OPPT; one from ORD) accounted for the representatives from the organizations other than ORD. See the detailed breakout of authors in Appendix B for further clarification.

Awards were recommended in seven of the eleven nomination categories, and for seven of the nine categories for which nominations were submitted. A total of 32 nominations were recommended for awards. A summary of the distribution of award recommendations among

categories is presented in Table II (see next page). There were originally 94 nominations with over 100 individual papers submitted. The Subcommittee combined several individual nominations and re-categorized several others, reducing the final number of nominations to 89, of which 42 were recommended for an award (32) or honorable mention (10). Re-categorized nominations are identified in Appendix A. The full list of award recommendations is contained in Appendix B. Eligible authors are noted in boldface in Appendix B. The percentage figure following their names reflects their individual level of effort on a given nomination as provided by EPA.

TABLE II - Summary of 1998 Award Recommendations

Nomination Categories *	# Nom.	Award Levels				%	Hon. Men.
		I	II	III	Tot		
Control Systems & Technology	16	1	2	3	6	38%	2
Ecology, Ecosystem Risk Assessment & Protection	20	0	3	6	9	45%	2
Health Effects, Health Risk Assessment	18	0	0	5	5	28%	1
Monitoring & Measurement Methods	15	0	2	2	4	27%	2
Transport and Fate	9	0	0	3	3	33%	2
Review Articles	6	0	0	4	4	67%	1
Risk Management & Policy Formulation	2	0	0	1	1	50%	0
Integrated Risk Assessment	2	0	0	0	0	0	0
Social Science Research	1	0	0	0	0	0	0
TOTALS:	89	1	7	24	32	36%	10

* Categories listed in the “1998 Nomination Procedures and Guidelines.”

3.3.1 Level I Awards

One Level I award was recommended this year to one scientist/engineer from an EPA research laboratory. Please see page B-1 for details.

3.3.2 Level II Awards

Seven Level II awards were recommended for a total of 16 scientists and engineers representing seven (7) EPA research laboratories and centers. Please see pages B-2 through B-4 of Appendix B for details.

3.3.3 Level III Awards

Twenty-four Level III awards were recommended for a total of 57 scientists and engineers representing 10 EPA research laboratories and centers, the Office of Air and Radiation, the Office of Water, the Office of Pollution Prevention and Toxics, the Office of Solid Waste and Emergency Response, and Regions II and VII.. Please see pages B-5 through B-10 of Appendix B for details.

3.3.4 Honorable Mention

Ten nominations were judged as being worthy of an Honorable Mention. Honorable Mentions included 18 scientists and engineers from five (5) EPA research laboratories. Please see pages B-11 through B-12 of Appendix B for details.

A list of acronyms used in Table B is on page B-12.

Appendix A - Re-Categorized Nominations

Original Nomination Number(s)	New Category	Remarks
EC0018 EC0031 MM0058	no change no change Changed to EC0058	Combined into a single Nomination as EC0018
EC0021 EC0025	no change no change	Combined into a single Nomination as EC0021
HE0042	Canceled	Duplicate of RA0081
IR0089	Canceled	Duplicate of IR0088

Appendix B - Nominations Recommended for Awards

This Appendix identifies the 32 nominations recommended for Level I, II, and III awards and the 10 nominations recommended for an Honorable Mention. This Appendix is divided into four parts. The first part (page B-1) provides information on the Level I award recommendations. The second part (pages B-2 to B-4) provides information on the Level II award recommendations. The third part (pages B-5 to B-10) provides information on the Level III award recommendations. The fourth part (pages B-11 to B-12) provides information on the Honorable Mention recommendations.

The first column (**Nom. #**) gives the nomination number as provided by EPA in the original submission. The second column (**Titles and Citations of Submitted Papers**) provides the full title and citation of all papers submitted as part of a given nomination. The third column (**Authors and Nominating Organization**) provides the name(s) of the EPA eligible authors (in boldface type) along with their level of effort (percentage) on the nomination. The primary nominating organization is also listed. The fourth column (**Recommended Award Level**) indicates which award is recommended (Level I, II, or III or Honorable Mention). The last column (**Suggested Citation from Nominating Organization**) reflects the language of the citation that was provided to the Subcommittee by the Agency. These are not Subcommittee citations.



AN SAB REPORT: RECOMMENDATIONS ON THE 1998 SCIENTIFIC AND TECHNOLOGICAL ACHIEVEMENT AWARD (STAA) NOMINATIONS

**PREPARED BY THE SCIENTIFIC AND
TECHNOLOGICAL ACHIEVEMENT
AWARDS (STAA) SUBCOMMITTEE OF THE
SCIENCE ADVISORY BOARD (SAB)**

**Appendix B -
FY1998 Scientific and Technological Achievement Awards (STAA)
Nominations Recommended for Awards**

Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
Nominations Recommended for a Level I Award (\$5,000) - Total of one				
CS0006	The effect of cofiring high-sulfur coal with municipal waste on formation of polychlorinated dibenzodioxin and polychlorinated dibenzofuran. <i>Environ. Engineering Science</i> . 15:59-70 (1998)	Dr. Brian K. Gullett (80%) NRMRL, RTP, NC	LEVEL I	Research on the effect of sulfur in preventing formation of chlorinated dioxins and furans.

Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
Nominations Recommended for a Level II Award (\$2,500) - Total of seven				
CS0002	Fine particle emissions from heavy fuel oil combustion in a firetube package boiler. <i>Combustion Science and Technology</i> . <u>134</u> :477-502 (1998)	Dr. C. Andrew Miller (35%) Dr. William P. Linak (35%) <i>NRMRL, RTP, NC</i>	LEVEL II	For contributing to a better understanding of the characteristics of particulate matter from heavy oil combustion.
CS0015	Methanol production from biomass and natural gas as transportation fuel. <i>Industrial Engineering Chemistry Research</i> . <u>37</u> :3760-3767 (1998)	Mr. Robert H. Borgwardt (100%) <i>NRMRL, RTP, NC</i>	LEVEL II	Identifying and evaluating cost-effective co-control technology for mobile sources of greenhouse gas and air-pollution emissions.
EC0018 EC0031 MM0058 (Recommend combining into a single nomination)	(EC0018) Soil atmosphere fluxes of carbon monoxide during early stages of postfire succession in upland Canadian boreal forests. <i>Journal of Geophysical Research</i> . <u>102</u> :29301-29311 (1997)	Dr. Richard G. Zepp (40%) Dr. Roger A. Burke (35%) <i>NERL, Athens, GA</i>	LEVEL II	Contribution to knowledge of the global carbon cycle by evaluating CO production in burned areas of boreal forests.
	(EC0031) Effect of fire on soil-atmosphere exchange of methane and carbon dioxide in Canadian boreal forests. <i>Journal of Geophysical Research</i> . <u>102</u> :29289-29300 (1997)	Dr. Roger A. Burke (40%) Dr. Richard G. Zepp (35%) <i>NERL, Athens, GA</i>		
	(MM0058) Distribution, flux, and photochemical production of carbon monoxide in a boreal beaver impoundment. <i>Journal of Geophysical Research</i> . <u>102</u> :29321-29329 (1997)	Dr. Richard G. Zepp (40%) <i>NERL, Athens, GA</i>		Contribution to understanding the global carbon cycle by demonstrating high photoproduction rates of CO in a boreal pond.

* NOTE: The percentages given after each name represent the percent of the total level of effort as documented in the EPA nomination. Page B-2

Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
(Recommend combining into a single nomination)	(EC0021) Technical basis and proposal for deriving sediment quality criteria for metals. <i>Environ. Toxicol. Chem.</i> <u>15</u> :2056-2066 (1996)	Dr. Gerald T. Ankley (25%) Mr. David J. Hansen (25%) Mr. Walter T. Berry (25%) <i>NHEERL, Duluth, MN</i>	LEVEL II	Development of sediment quality criteria for metals.
	(EC0025) a) Predicting the toxicity of metal-contaminated field sediments using interstitial concentrations of metals and acid-volatile sulfide normalizations. <i>Environ. Toxicol. Chem.</i> <u>15</u> :2080-2094 (1996) b) Chronic effect of cadmium in sediments on colonization by benthic marine organisms: An evaluation of the role of interstitial cadmium and acid-volatile sulfide in biological availability. <i>Environ. Toxicol. Chem.</i> <u>15</u> :2126-2137 (1996)	Mr. David J. Hansen (30%) Dr. Warren S. Boothman (5%) Dr. Gerald T. Ankley (10%) Ms. Carol Pesch (5%) <i>NHEERL, Narragansett, RI</i>		Technical basis of equilibrium partitioning-derived sediment guidelines for metals.
EC0026	Using lake sediment mercury flux ratios to evaluate the regional and continental dimensions of mercury deposition in arctic and boreal ecosystems. <i>Atmosp. Environ.</i> <u>32</u> :919-928 (1998)	Dr. Dixon H. Landers (75%) <i>NHEERL, Corvallis, OR</i>	LEVEL II	For outstanding contributions to the understanding of spatial contamination by mercury of arctic and boreal communities.
MM0067	Fine and coarse particles: Concentration relationships relevant to epidemiological studies. <i>J. Air and Waste Management Assoc.</i> <u>47</u> :1238-1249 (1997)	Dr. William E. Wilson (80%) <i>NCEA, RTP, NC</i>	LEVEL II	For providing scientific support for PM _{2.5} standards by analyses of exposure metrics used in epidemiologic studies.

* NOTE: The percentages given after each name represent the percent of the total level of effort as documented in the EPA nomination. Page B-3

Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
MM0068	<p>a) Identification of pollutants in a municipal well using high resolution mass spectrometry. <i>Anal. Chem.</i> <u>68</u>:553-560 (1998)</p> <p>b) A mass peak profile generation model to facilitate determination of elemental composition of ions based on exact masses and isotopic abundances. <i>Journal of the American Society for Mass Spectrometry.</i> <u>8</u>:170-182 (1997)</p> <p>c) Determination of elemental compositions from mass peak profiles of the molecular ion (M) and the M+1 and M+2 ions. <i>Rapid Communications in Mass Spectrometry.</i> <u>12</u>:1161-1169 (1996)</p>	<p>Dr. Andrew J. Grange Dr. G. Wayne Sovocool Dr. William C. Brumley Dr. Donald F. Gurka (total percentages are not reported here since the nomination included different individual percentages for each author for each of the three papers included in the nomination -- these percentages ranged from 2% to 90%)</p> <p><i>NERL, Las Vegas, NV</i></p>	LEVEL II	Mass peak profiling from selected ion recording data and a profile generation model for identifying compounds.

Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
Nominations Recommended for a Level III Award (\$1,000) - Total of twenty-four				
CS0001	a) Combined laboratory/field study on the use of nitrate for in situ bioremediation of a fuel-contaminated aquifer. <i>Environ. Sci. and Technol.</i> <u>32</u> :1832-1840 (1998) b) Effect of nitrate-based bioremediation on contaminant distribution and sediment toxicity – column study. <i>Environ. Toxicol. Chem.</i> <u>17</u> :349-361 (1998)	Dr. Stephen R. Hutchins (75%) Mr. Dennis E. Miller (10%) <i>NRMRL, Cincinnati, OH</i>	LEVEL III	For laboratory and field research on enhanced anaerobic bioremediation of fuel-contaminated aquifers.
CS0003	The use of aeration for corrosion control. <i>J. Amer. Water Works Assoc.</i> <u>90</u> :74-88 (1998)	Mr. Darren Lytle (50%) Mr. Michael Schock (40%) <i>NRMRL, Cincinnati, OH</i>	LEVEL III	The application of aeration to reduce lead and copper in waters with suitable pH and carbon dioxide levels is discussed and demonstrated.
CS0014	Chlorine demand and TTHM formation kinetics: A second-order model. <i>J. Environ. Engineering.</i> <u>124</u> :16-24 (1998)	Dr. Robert M. Clark (100%) <i>NRMRL, Cincinnati, OH</i>	LEVEL III	This paper represents a unique and original model that provides the basis for a metric that can be used to balance the relative risks associated with the formation of TTHMs and the use of chlorine for preventing microbial contamination in drinking water.
EC0019	Use of auxiliary data for spatial interpolation of ozone exposures in southeastern forests. <i>Environmetrics.</i> <u>8</u> :43-61 (1997)	Dr. Donald L. Phillips (50%) Dr. E. Henry Lee (15%) Dr. William E. Hogsett (10%) Dr. David T. Tingey (10%) <i>NHEERL, Corvallis, OR</i>	LEVEL III	Use of spatial statistics to improve estimates of ozone exposure for assessment of risk to forests.

Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
EC0027	Predicting modes of toxic action from chemical structure: Acute toxicity in the fathead minnow (<i>Pimephales promelas</i>). <i>Environ. Toxicol. Chem.</i> <u>16</u> :948-967 (1997)	Ms. Christine L. Russom (20%) Dr. Stephen P. Bradbury (20%) Dr. Stephen J. Broderius (20%) Mr. Dean Hammermeister (20%) Mr. Robert Drummond (20%) <i>NHEERL, Duluth, MN</i>	LEVEL III	The development of a knowledge base for use in predicting the acute mode of action and toxicity of organic chemicals.
EC0029	Application of toxicity-based fractionation techniques and structure-activity relationship models for the identification of phototoxic polycyclic aromatic hydrocarbons in sediment pore water. <i>Environ. Toxicol. Chem.</i> <u>17</u> :1021-1033 (1998)	Ms. Patricia A. Kosian (25%) Ms. Elizabeth A. Makynen (20%) Dr. David Mount (15%) Dr. Gerald Ankley (15%) <i>NHEERL, Duluth, MN</i>	LEVEL III	Adaptation and application of fractionation techniques and QSAR models to identify phototoxic PAHs in sediment.
EC0030	Sediment microbial respiration in a synoptic survey of mid-Atlantic region streams. <i>Freshwater Biology.</i> <u>39</u> :493-501 (1998)	Dr. Brian H. Hill (75%) <i>NHEERL, Cincinnati, OH</i>	LEVEL III	For advances in the application of ecosystem indicators at a regional scale.
EC0034	Revised approach to toxicity test acceptability criteria using a statistical performance assessment. <i>Environ. Toxicol. Chem.</i> <u>16</u> :1322-1329 (1997)	Dr. Glen Thursby (70%) <i>NHEERL, Narragansett, RI</i>	LEVEL III	Toxicity Test Acceptance Criteria.

Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
EC0037	<p>a) Regional, habitat, and human development influences on coastal wetland and beach fish assemblages in Green Bay, Lake Michigan. <i>J. Great Lakes Res.</i> <u>23</u>:36-51 (1997)</p> <p>b) Patterns in fish assemblages from coastal wetland and beach habitats in Green Bay, Lake Michigan: a multivariate analysis of abiotic and biotic forcing factors. <i>J. Fisheries Aquatic Sci.</i> <u>54</u>:1743-1761 (1997)</p> <p>c) Relative abundance and distribution of ruffe (<i>Gymnocephalus cernuus</i>) in a Lake Superior coastal wetland fish assemblage. <i>J. Great Lakes Res.</i> <u>24</u>:293-303 (1998)</p>	<p>Dr. John Brazner (80%) Mr. Danny K. Tanner (10%)</p> <p><i>NHEERL, Duluth, MN</i></p>	LEVEL III	Elucidating abiotic and biotic influences on Great Lakes coastal wetland fish assemblages.
HE0038	<p>a) Age- and gender-related differences in the time-course of behavioral and biochemical effects produced by oral chlorpyrifos in rats. <i>Toxicol. Appl. Pharm.</i> <u>149</u>:107-119 (1998)</p> <p>b) Age- and gender-related differences in sensitivity to chlorpyrifos in the rat reflect developmental profiles of esterase activities. <i>Toxicol. Sci.</i> <u>46</u>:in press (1998)</p> <p>c) Rat brain acetylcholinesterase activity: Developmental profile and maturational sensitivity to carbamate and organophosphorus inhibitors. <i>Toxicology</i> <u>125</u>:13-19 (1998)</p>	<p>Dr. Stephanie Padilla (36.5%) Dr. Virginia Moser (36.5%)</p> <p><i>NHEERL, RTP, NC</i></p>	LEVEL III	For research to increase understanding of the age-related differences in sensitivity to chlorpyrifos-induced neurotoxicity.

Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
HE0040	<p>a) Determination of parameters responsible for pharmacokinetic behavior of TCDD in female Sprague-Dawley rats. <i>Toxicol. Appl. Pharm.</i> <u>147</u>:151-168 (1997)</p> <p>b) A pharmacodynamic analysis of TCDD-induced cytochrome P450 gene expression in multiple tissues: dose- and time-dependent effects. <i>Toxicol. Appl. Pharm.</i> <u>151</u>:294-310 (1998)</p>	<p>Dr. Marina V. Evans (5%) Ms. Vickie M. Richardson (20%) Ms. Janet J. Diliberto (5%) Dr. Linda S. Birnbaum (10%)</p> <p><i>NHEERL, RTP, NC</i></p>	LEVEL III	A critical approach to pharmacokinetic and pharmacodynamic modeling of TCDD.
HE0048	<p>Arsenic alters cytosine methylation patterns of the promoter of the tumor suppressor gene p53 in human lung cells: a model for a mechanism of carcinogenesis.. <i>Mutation Research.</i> <u>386</u>:263-277 (1997)</p>	<p>Dr. Marc J. Mass (80%)</p> <p><i>NHEERL, RTP, NC</i></p>	LEVEL III	In recognition of significant contributions to the understanding of a potential role for alterations of DNA methylation in arsenic carcinogenesis.
HE0052	<p>a) Disruption of normal iron homeostatis after bronchial instillation of an iron-coated particle. <i>Am. Jour. Physiol.</i> <u>274</u>:L396-L403 (1998)</p> <p>b) Metal-dependent expression of ferritin and lactoferrin by respiratory epithelial cells. <i>Am. Jour. Physiol.</i> <u>274</u>:L728-L736 (1998)</p> <p>c) Metal storage and transport proteins increase after exposure of the rat lung to an air pollution particle. <i>Toxicology Pathology.</i> <u>26</u>:388-394 (1998)</p>	<p>Dr. Andrew J. Ghio (40%) Ms. Jacqueline Carter (15%) Dr. Robert Devlin (15%) Ms. Lisa A. Dailey (15%) Ms. Judy Richards (15%)</p> <p><i>NHEERL, RTP, NC</i></p>	LEVEL III	The role of lactoferrin and ferritin in injury after particle exposure.
MM0060	<p>Measurement of hydroxyl radical activity in soil slurry using the spin trap α-(4-Pyridyl-1-Oxide)-N-tert-butylnitron. <i>Environ. Sci. Technol.</i> <u>32</u>:3436-3441 (1998)</p>	<p>Dr. Scott G. Huling (85%)</p> <p><i>NRMRL, Ada, OK</i></p>	LEVEL III	Measurement of hydroxyl radical activity using 4-POBN - significance of available Fe, OH scavenging, and non-productive reactions.

Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
MM0063	Using GC-MS/Combustion/IRMS to determine the ¹³ C/ ¹² C ratios of individual hydrocarbons produced from the combustion of biomass materials-application to biomass burning. <i>Organic Geochemistry</i> . <u>27</u> :567-581 (1997)	Dr. Roger A. Burke (45%) <i>NERL, Athens, GA</i>	LEVEL III	Using GC-MS/Combustion/IRMS to determine isotope ratios of hydrocarbons produced by biomass burning.
TF0072	Estimating subsurface fissure apertures in karst aquifers from equilibrium activities. <i>Environmental and Engineering Geoscience</i> . <u>IV</u> :145-159 (1998)	Dr. Malcolm S. Field (90%) <i>NCEA, Washington, DC</i>	LEVEL III	Scientific and Technological Achievement Award for pioneering the use of the environmental isotope ²²² Rn as a tool for characterizing karst fissure apertures.
TF0074	Environmental screening modeling of mercury in the upper Everglades of South Florida. <i>Environmental Health and Science</i> . <u>A33</u> :497-525 (1998)	Mr. Robert B. Ambrose (50%) <i>NERL, Athens, GA</i>	LEVEL III	For development of the first predictive screening models of mercury transformation and transport in the Everglades.
TF0078	Comparison of two models for predicting bioaccumulation of hydrophobic organic chemicals in a Great Lakes food web. <i>Environ. Toxicol. Chem.</i> <u>17</u> :383-393 (1998)	Mr. Lawrence P. Burkhard (100%) <i>NHEERL, Duluth, MN</i>	LEVEL III	Evaluation of uncertainties in predicting concentrations of bioaccumulative chemicals in aquatic organisms using food web models.
RA0080	Emission factors for the disposal of energetic materials by open burning and open detonation (OB/OD). <i>EPA Research Report # EPA/600/R-98/103</i> . 133 pgs (1998)	Dr. William J. Mitchell (80%) Dr. Jack C. Suggs (20%) <i>NERL, RTP, NC</i>	LEVEL III	In recognition of their achievements in substantially increasing our knowledge of the impact that open burning and open detonation disposal practices have on human health and the environment and in helping the Department of Defense avoid developing disposal techniques that were not needed.
RA0081	Assessing the cancer risk from environmental PCBs. <i>Environ. Health Perspect.</i> <u>106</u> :317-323 (1998)	Dr. Vincent James Cogliano (100%) <i>NCEA, Washington, DC</i>	LEVEL III	For an innovative and authoritative assessment of the cancer risk from environmental PCBs.

* NOTE: The percentages given after each name represent the percent of the total level of effort as documented in the EPA nomination. Page B-9

Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
RA0083	Drinking water disinfection by-products. <i>Encyclopedia of Environmental Analysis & Remediation</i> , John Wiley and Sons, Inc. Robert A. Meyers, Ed., New York, NY. <u>Vol. 3</u> , pp 1398-1421 (1998)	Dr. Susan D. Richardson (100%) <i>NERL, Athens, GA</i>	LEVEL III	Comprehensive state-of-science identification and assessment of potential human health risks of drinking water DPBs.
RA0086	a) Stream temperature simulation of forested riparian areas: I. Watershed scale model development. <i>J. Environ. Engineering</i> . <u>124</u> :304-315 (1998) b) Stream temperature simulation of forested riparian areas: II. Model application. <i>J. Environ. Engineering</i> . <u>124</u> :316-328 (1998)	Dr. Steven C. McCutcheon (25%) Mr. Robert F. Carousel (10%) Mr. Douglas J. Norton (10%) <i>NERL, Athens, GA</i>	LEVEL III	For establishing the state of the practice in simulating watershed stream temperature dynamics for TMDLs.
RA0093	Assessing risks to ecological systems from chemicals. <i>Handbook of Environmental Risk Assessment and Management</i> . Peter Calow, Ed., pp 24-90 (1998)	Dr. Jerry C. Smrcek (50%) Dr. Maurice G. Zeeman (50%) <i>Risk Assessment Div. OPPT, Washington, DC</i>	LEVEL III	Review of ecological hazard and risk assessment methods.
HE0094	a) Integrated exposure uptake biokinetic model for lead in children: Empirical comparisons with epidemiological data. <i>Environ. Health Perspect. Suppl.</i> <u>106</u> :1-11 (1998) b) Integrated exposure uptake biokinetic model for lead in children: Independent validation and verification. <i>Environ. Health Perspect. Suppl.</i> <u>106</u> :1-9 (1998) c) The conceptual structure of the integrated exposure uptake biokinetic model for lead in children. <i>Environ. Health Perspect. Suppl.</i> <u>106</u> :1-18 (1998)	Dr. Barbara Davis (9%) Dr. Robert Elias (6%) Ms. Karen Hogan (22%) Dr. Mark Maddaloni (6%) Dr. Allan Marcus (12%) Dr. Roy Smith (5%) Ms. Patricia Valentine (8%) Mr. Paul White (22%) Dr. Larry Zaragoza (10%) <i>Risk Assessment Div. OPPT, Washington, DC</i>	LEVEL III	Substantiating Risk Assessment Predictions for Lead in Children

* NOTE: The percentages given after each name represent the percent of the total level of effort as documented in the EPA nomination. Page B-10

Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
Nominations Recommended for Honorable Mention (no cash award) - Total of ten				
CS0005	DDT, DDD, and DDE dechlorination by zero-valent iron. <i>Environ. Sci. Technol.</i> <u>31</u> :3448-3454 (1997)	Dr. Gregory D. Sayles (50%) <i>NRMRL, Cincinnati, OH</i>	HONORABLE MENTION	The first report of an approach to dechlorinate the pesticides DDT, DDD, and DDE, using zero-valent iron (iron powder).
CS0012	Enhanced formation of chlorinated PICs by the addition of bromine. <i>Combustion Science and Technology.</i> <u>134</u> :367-388 (1998)	Dr. Paul M. Lemieux (70%) Mr. Jeffrey V. Ryan (30%) <i>NRMRL, RTP, NC</i>	HONORABLE MENTION	For examining the enhanced formation of chlorinated organics during combustion by the addition of bromine.
EC0023	Effects of DDT sediment-contamination on macrofaunal community structure and composition in San Francisco Bay. <i>Marine Biology.</i> <u>130</u> :323-334 (1997)	Dr. Steven P. Ferraro (60%) Ms. Faith A. Cole (40%) <i>NHEERL, Corvallis, OR</i>	HONORABLE MENTION	Ecological risk assessment of DDT sediment contamination on San Francisco Bay macrofauna.
EC0024	Identification of acute toxicants in New Bedford Harbor sediments. <i>J. Environ. Toxicol. Chem.</i> <u>16</u> :551-558 (1997)	Dr. Kay T. Ho (75%) Mr. Rick McKinney (10%) Ms. Ann Kuhn (5%) Ms. Margaret Pelletier (5%) Dr. Robert Burgess (5%) <i>NHEERL, Narragansett, RI</i>	HONORABLE MENTION	Identification of acute toxicants in sediments from a marine industrial harbor.
HE0046	Thyroxine replacement therapy partially alleviates the hypothyroidism and low-frequency hearing loss in rats caused by developmental exposure to Aroclor 1254. <i>Toxicological Sciences.</i> <u>45</u> :94-105 (1998)	Dr. Ellen S. Goldey (50%) Dr. Kevin M. Crofton (50%) <i>NHEERL, RTP, NC</i>	HONORABLE MENTION	For research on the role of thyroid hormones in the developmental neurotoxicity of polychlorinated biphenyls.
MM0057	a) Sensitive detection of transgenic plant marker gene persistence in soil microcosms. <i>Molecular Ecology.</i> <u>5</u> :603-613 (1996) b) Quantification of transgenic plant marker gene persistence in the field. <i>Molecular Ecology.</i> <u>6</u> :1-7 (1997)	Dr. R.J. Seidler (35%) Dr. L.S. Watrud (5%) <i>NHEERL, Corvallis, OR</i>	HONORABLE MENTION	Detection of Recombinant DNA in soil/

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
MM0061	Analysis of dissolved methane, ethane, and ethylene in ground water by a standard gas chromatograph technique. <i>J. Chromatographic Science</i> . <u>36</u> :253-256 (1998)	Dr. Don Kampbell (50%) <i>NRMRL, Cincinnati, OH</i>	HONORABLE MENTION	Development of a widely adopted assay technique for dissolved gases in ground water to identify bioremediation processes.
TF0073	Effects of sediment homogenization on interstitial water PCB geochemistry. <i>Arch. Environ. Contamin. and Toxicol.</i> <u>33</u> :125-129 (1997)	Dr. Robert M. Burgess (95%) Mr. Rick McKinney (5%) <i>NHEERL, Narragansett, RI</i>	HONORABLE MENTION	Artifacts to PCB geochemistry caused by sediment homogenization.
TF0077	Effect of aqueous phase properties on clay particle zeta potential and electro-osmotic permeability: Implications for electro-kinetic soil remediation processes. <i>J. Hazardous Materials</i> . <u>55</u> :1-22 (1997)	Dr. Leland M. Vane (80%) Ms. Gwen M. Zang (20%) <i>NRMRL, Cincinnati, OH</i>	HONORABLE MENTION	Advances in electro-kinetic soil transport processes.
RA0082	Tires, Open Burning. <i>Encyclopedia of Environmental Analysis & Remediation</i> , John Wiley and Sons, Inc. Robert A. Meyers, Ed., New York, NY. pp 4813-48321 (1998)	Dr. Paul M. Lemieux (40%) Mr. Jeffrey V. Ryan (20%) Dr. David M. DeMarini (20%) <i>NRMRL, RTP, NC</i>	HONORABLE MENTION	For investigation into the chemical composition and mutagenicity of emissions from the open burning of scrap tires.

Key to Acronyms used in the above Table:

NCEA National Center for Environmental Assessment
NERL National Exposure Research Laboratory
NHEERL National Health and Environmental Effects Laboratory
NRMRL National Risk Management Research Laboratory
OPPT Office of Pollution Prevention and Toxics
RTP Research Triangle Park

* NOTE: The percentages given after each name represent the percent of the total level of effort as documented in the EPA nomination. Page B-12

