



RECOMMENDATIONS ON THE FY2000 SCIENTIFIC AND TECHNOLOGICAL ACHIEVEMENT AWARD (STAA) NOMINATIONS: AN SAB REPORT

**A REPORT BY THE SCIENTIFIC
AND TECHNOLOGICAL
ACHIEVEMENT AWARDS
SUBCOMMITTEE OF THE EPA
SCIENCE ADVISORY BOARD**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

August 29, 2001

OFFICE OF THE ADMINISTRATOR
SCIENCE ADVISORY BOARD

EPA-SAB-EC-01-007

Honorable Christine Todd Whitman
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

Subject: Recommendations on the FY2000 Scientific and Technological
Achievement Awards (STAA) Award Nominations: an SAB Report

Dear Governor Whitman:

The EPA Science Advisory Board's (SAB) Scientific and Technological Achievement Awards (STAA) Subcommittee has completed its review of the nominations submitted by the Agency for the FY2000 awards program. The Subcommittee conducted its review in closed session on June 11-12, 2001 in Washington, DC. The results of the Subcommittee's efforts were reviewed and approved by the EPA Science Advisory Board's Executive Committee at a public meeting held in the US EPA National Risk Management Research Laboratory (NRMRL) in Cincinnati, OH on July 17-18, 2001.

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 (ER), 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), Environmental Trends for Drivers of Future Risk (EF), Social Science Research (SS), and Environmental Education (EE). Agency scientists and engineers submitted a total of 126 nominations from among the first nine categories. Nominations were not submitted for the last two categories this year (SS and EE). A total of 42 were recommended for a cash award, with an additional 21 recommended for Honorable Mention.

Recommendations are included for awards in seven of the nine categories for which nominations were submitted. One nomination each was submitted in the Environmental Trends

for Drivers of Future Risk (EF) and Integrated Risk Management (IR) 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 21 papers for Honorable Mention. The authors whose papers were recommended for awards this year represent the Office of Air and Radiation (OAR), the Office of Prevention, Pesticides, and Toxic Substances (OPPTS), the Office of Solid Waste and Emergency Response (OSWER), the Office of Policy, Economics, and Innovation (OPEI), Region VIII, and 15 research laboratories and centers within the Office of Research and Development.

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 in these areas should not be limited to ORD laboratories. As we have pointed out in each of our recent reports, the Subcommittee continues to note the lack of a significant number of nominations from Program areas other than ORD. However, this year there was a modest increase in the number of such papers. In fact, we are pleased to note this year, that one of our two recommendations for a Level I award comes from an office outside of ORD.

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. We commend 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 even 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 the Agency's Peer Review Policy and the Peer Review Handbook. Furthermore, it supports your emphasis on sound science forming the basis for sound decisions.

We would appreciate being informed of the final disposition of awards and the mechanisms by which EPA advertises these awards to the Agency at large and the overall scientific community. This has been a long standing request by the Subcommittee and is the subject of a separate Commentary.

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 look forward to serving the Agency again in this important activity.

Sincerely,

/ Signed /

Dr. William Glaze, Chair
EPA Science Advisory Board

/ Signed /

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

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ABSTRACT

This report represents the conclusions and recommendations of the U.S. Environmental Protection Agency's Science Advisory Board regarding the FY2000 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 126 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, Environmental Trends for Drivers of Future Risk, Social Science Research, and Environmental Education). Of these, the Subcommittee recommended 42 nominations (33 percent of the nominations) for awards, and also recommended that 21 additional nominations be recognized with Honorable Mention. The authors whose papers were recommended for awards this year represent the Office of Air and Radiation (OAR), the Office of Prevention, Pesticides, and Toxic Substances (OPPTS), the Office of Solid Waste and Emergency Response (OSWER), the Office of Policy, Economics, and Innovation (OPEI), Region VIII, and 15 research laboratories and centers within the Office of Research and Development.

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. The Subcommittee also strongly encouraged that EPA broadly acknowledge the results of the award competition.

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

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EPA Science Advisory Board
Scientific And Technological Achievement Awards Subcommittee***

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1. EXECUTIVE SUMMARY

The Scientific and Technological Achievement Awards (STAA) Subcommittee of the EPA Science Advisory Board (SAB) reviewed and evaluated the 126 nominations for the FY2000 program that were submitted by EPA research laboratory directors and program office directors. The Subcommittee met in Washington, DC, on June 11-12, 2001, to determine award recommendations.

The STAA review program is a long-standing partnership between the Agency and the EPA Science Advisory Board. Each year since 1980 Agency scientists and engineers have submitted 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 42 nominations for awards and recommended that 21 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 offices from which papers were recommended for awards this year are OAR, OPPTS, OSWER, OPEI, Region VIII, and 15 research laboratories and centers within the Office of Research and Development.

The Subcommittee recommends that continued 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 on important scientific issues and issues of specific importance to EPA.

2. INTRODUCTION

2.1 Request for EPA Science Advisory Board (SAB) Review

At the request of the EPA Office of Research and Development (ORD), the EPA 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 FY2000 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 2001, the Office of Research and Development (ORD) provided the SAB with copies of 126 nominations. 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 high 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 within its discipline or

¹ These categories are: Control Systems & Technology (CS), Ecology & Ecosystem Risk Assessment (ER), 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), and Environmental Trends for Drivers of Future Risk (EF).

² These categories are: Environmental Education (EE) and Social Science Research (SS).

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 Subcommittee 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 EPA 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 Subcommittee member chose at least 35 nominations to review. Members were encouraged to include nominations from areas of general expertise as well as areas in which they were most 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 three 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 June 11-12, 2001. Nominations judged to merit an award at some level were reviewed a second time by the Subcommittee, and in most cases, a third time, to ensure that a complete evaluation had been made and that the appropriate award level was recommended. 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

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	
HE0019	Health Assessment: Trinitrochicken wire	Dr. Smith	2	NR	NR
		Dr. Jones	3	III	
		Dr. Adams	4	NR	
ER0122	Ecological Impacts of Trinitrochicken wire	Dr. Smith	4	HM	III
		Dr. Jones	3	III	
		Dr. Adams	2	NR	
		Dr. Williams	3	III	
RA0098	Trinitrochicken wire - A Review	Dr. Black	3	I	I
		Dr. Green	4	I	
		Dr. Jackson	2	II	
		Dr. White	1	III	

* 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; HM = Honorable Mention; I, II, III = Award Levels

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 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 A.

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

The Subcommittee met on June 11-12, 2001, in Washington, DC in a closed session due to the discussions of issues concerning personal privacy 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. The Subcommittee developed preliminary rating for papers in each category, including discussion of each nominated paper. 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) at its public meeting on July 17-18, 2001 in Cincinnati, OH. For that review, the Subcommittee report, less the actual award recommendations (Appendix A), was made available to the EC and the interested public.

⁴ 65 Federal Register 19933, April 18, 2001.

3. EVALUATION OF THE FY2000 SCIENTIFIC AND TECHNOLOGICAL ACHIEVEMENT AWARD NOMINATIONS

3.1 General Findings of the Subcommittee

In recent years, based on the continuing decline in the number of our recommendations for Level I and Level II awards (see Table II - Comparison of Level I & II Awards over Time), the Subcommittee has felt that the overall quality of the papers nominated has been declining. This year, we are happy to report, has shown an increase in both Level I (two) and

Table II - Comparison of Level I & II Awards over Time

Award Level	FY1996	FY1997	FY1998	FY1999	FY2000
Level I	4	3	1	0	2
Level II	16	11	7	5	11

Level II (11) awards. We hope this is indicative of rise in the overall quality of submitted nominations and will be a continuing trend in the coming years. 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 OAR, OPPTS, OSWER, OPEI, Region VIII, and 15 research laboratories and centers within the Office of Research and Development.

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 six 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, the submission process needs to encourage submissions from outside of ORD as well.

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 thorough testing of a model. We also looked for innovative applications theories from other disciplines and collaborations of interdisciplinary teams of scientists and engineer. 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, 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 awards in the Risk Management and Policy Formulation (RM) category. 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, two papers were submitted in the Integrated Risk Assessment category, and while an award was not recommended, the Subcommittee was encouraged to see nominations 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 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; and in fact, several were recognized this year.

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.

Last year, the Subcommittee made a number of recommendations to ORD staff and managers that work with the STAA program, and to the authors of the nominated papers. We are pleased to see that many of these recommendations have already been implemented. Although our most recent recommendations from last year were not made in time to be included in this year's package, we look forward to seeing those changes next year. We appreciate the effort to accommodate our recommendations and, as a result, look forward to an even more improved program next year. We offer the following additional recommendations and/or comments:

- a) Review articles (Category RA) must include a synthesis and an analysis, not just a summary of relevant literature.
- b) The suggested citations provided for many of the nominations need to reflect the value of the work to the Agency. Once again, as was the case last year, many 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 to EPA.
- c) The Subcommittee again strongly 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.
- d) Subcommittee has requested, but has yet to receive any feedback from the Agency regarding how the Agency has handled the announcement of award winners or the general approach EPA has taken to present the awards themselves.

3.3 Award Recommendations

The EPA authors recommended for awards include scientists and engineers from OAR, OPPTS, OSWER, OPEI, Region VIII, and 15 research laboratories and centers within the Office of Research and Development. See the detailed breakout of authors in Appendix A 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 42 nominations were recommended for awards. A summary of the distribution of award recommendations

among categories is presented in Table III. There were 126 nominations with over 130 individual papers submitted. Of those submitted, 63 were recommended for an award (42) or

TABLE III - Summary of FY2000 Award Recommendations

Nomination Categories *	Total Nom.	Award Levels				Award %	Hon. Men.
		I	II	III	Tot		
Control Systems & Technology (CS)	13	1	2	2	5	38%	2
Ecology, Ecosystem Risk Assessment & Protection (ER)	20	1	0	6	7	35%	4
Health Effects, Health Risk Assessment (HE)	30	0	3	8	11	37%	5
Monitoring & Measurement Methods (MM)	17	0	2	3	5	29%	2
Transport and Fate (TF)	22	0	0	7	7	32%	5
Review Articles (RA)	18	0	3	2	5	28%	3
Risk Management & Policy Formulation (RM)	4	0	1	1	2	50%	0
Integrated Risk Assessment (IR)	1	0	0	0	0	0%	0
Environmental Futures (EF)	1	0	0	0	0	0%	0
TOTALS:	126	2	11	29	42	33%	21

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

honorable mention (21). There were no re-categorized or combined nominations identified this year. The full list of award recommendations is contained in Appendix A. Eligible authors are noted in boldface in Appendix A. The percentage figure following their names reflects their individual level of effort on a given nomination as provided by EPA.

3.3.1 Level I Awards

Two Level I awards were recommended this year. Please see page A-1 of Appendix A for details.

3.3.2 Level II Awards

Eleven Level II awards were recommended. Please see pages A-1 through A-3 of Appendix A for details.

3.3.3 Level III Awards

Twenty-nine Level III awards were recommended. Please see pages A-4 through A-11 of Appendix A for details.

3.3.4 Honorable Mention

Twenty-one nominations were judged as being worthy of an Honorable Mention. Please see pages A-11 through A-17 of Appendix A for details.

A list of acronyms used in Table A is on page A-17.

Appendix A - Nominations Recommended for Awards

This Appendix identifies the 42 nominations recommended for Level I, II, and III awards and the 21 nominations recommended for an Honorable Mention. This Appendix is divided into four parts. The first part (page A-1) provides information on the Level I award recommendations. The second part (pages A-1 to A-3) provides information on the Level II award recommendations. The third part (pages A-4 to A-11) provides information on the Level III award recommendations. The fourth part (pages A-11 to A-16) 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.

**Appendix A -
FY2000 Scientific and Technological Achievement Awards (STAA)
Nominations Recommended for Awards**

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
Nominations Recommended for a Level I Award (\$5,000) - Total of Two				
CS0001	Demonstration of Tier 2 Emission Levels for Heavy Light-Duty Trucks. <i>SAE Technical Paper Series, 2000-01-1957</i>	Mr. Joseph F. McDonald (60%) Mr. Lee Jones (40%) <i>NVFEL, Ann Arbor, MI</i>	LEVEL I	For exceptional technological achievement in demonstrating the emission reduction potential of SUVs and light-trucks.
ER0016	Regional trends in aquatic recovery from acidification in North America and Europe. <i>Nature, 401:575-578 (1999)</i>	Dr. John L. Stoddard (95%) <i>NHEERL, Corvallis, OR</i>	LEVEL I	For outstanding research in the area of surface water recovery from acidification.
Nominations Recommended for a Level II Award (\$2,500) - Total of Eleven				
CS0010	Contaminant Adsorption and Oxidation via Fenton Reaction. <i>Journal of Environmental Engineering, 126(7):595-600 (2000)</i> (Two additional papers were part of this nomination)	Dr. Scott G. Huling (85%) <i>NRMRL, Ada, OK</i>	LEVEL II	Chemical oxidation research leading to a new treatment technology and improved feasibility testing methods and process fundamentals.
CS0013	Treatment Technology for Remediation of Wood Preserving Sites: Overview. <i>Remediation, 10(2):35-49 (2000)</i> (Four additional papers were part of this nomination)	Mr. Edward R. Bates (33 a %) Mr. Douglas W. Grosse (33 a %) Dr. E. Sahle-Demessie (33 a %) <i>NRMRL, Cincinnati, OH</i>	LEVEL II	Substantial advancement to the state of the science for cost effective remediation of contaminated wood preserving sites.

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Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
HE0042	<p>Residual oil fly ash exposure enhances allergic sensitization to house dust mite. <i>Toxicology and Applied Pharmacology</i>, 158:269-277 (1999)</p> <p>(One additional paper was part of this nomination)</p>	<p>Dr. M. Ian Gilmour (40%) Dr. MaryJane Selgrade (5%) Mr. Darrel Winsett (10%)</p> <p><i>NHEERL, RTP, NC</i></p>	LEVEL II	This work demonstrates that exposure to PM and associated metals may enhance the development of allergic asthma.
HE0055	<p>Concentrated Ambient Air Particles Induce Mild Pulmonary Inflammation in Health Human Volunteers. <i>American Journal of Respiratory and Critical Care Medicine</i>, 162:981-988 (2000)</p>	<p>Dr. Andrew Ghio, (40%) Chong S. Kim (20%) Robert B. Devlin (40%)</p> <p><i>NHEERL, RTP, NC</i></p>	LEVEL II	Effect of Ambient Air Particles on the Cardiopulmonary System of Humans.
MM0064	<p>Isotope hydrology dynamics of riverine wetlands in the Kankakee watershed, Indiana. <i>Journal of the American Water Resources Association</i>, 36(4):771-790 (2000)</p>	<p>Dr. William C. Sidle (75%) Ms. Deborah Roose (5%)</p> <p><i>NRMRL, Cincinnati, OH</i></p>	LEVEL II	Measurement and behavior of multiple isotopes for the determination of flow hydraulics and nutrient transformations in wetlands of the Kankakee watershed, Illinois-Indiana.
MM0072	<p>Identification of New Ozone Disinfection Byproducts in Drinking Water. <i>Environmental Science & Technology</i>, 33(19):3368-3377 (1999)</p> <p>(One additional paper was part of this nomination)</p>	<p>Dr. Susan D. Richardson (40%) Mr. Alfred D. Thruston, Jr. (28%) Ms. Tashia v. Caughran (5%) Dr. Paul H. Chen (6%) Dr. Timothy W. Collette (2%) Mr. Terrance L. Floyd (2%) Ms. Kathleen M. Schenck (10%) Mr. Benjamin W. Lykins, Jr. (5%)</p> <p><i>NERL, Athens, GA</i></p>	LEVEL II	For Comprehensive Identification of Disinfection By-products in Drinking Water.

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Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
RA0099	Comparison of Scientific Findings From Major Ozone Field Studies in North America and Europe. <i>Atmospheric Environment</i> , 34:1885-1920 (2000)	Dr. Paul A. Solomon (65%) <i>NERL, Las Vegas, NV</i>	LEVEL II	An integrative assessment of ozone science over the decade 1986-1997 with an emphasis on policy-relevant findings.
RA0104	Pharmaceuticals and Personal Care Products in the Environment: Agents of Subtle Change? <i>Environmental Health Perspectives</i> , 107(supp 6):907-938 (1999)	Dr. Christian G. Daughton (90%) <i>NERL, Las Vegas, NV</i>	LEVEL II	Seminal assessment of the significance of pharmaceuticals and personal care products as potential environmental pollutants.
RA0111	A review and synthesis of monoterpene speciation from forests in the United States. <i>Atmospheric Environment</i> , 34(11):1761-1781 (2000)	Chris D. Geron (80%) Robert R. Arnts (10%) <i>NRMRL, RTP, NC</i>	LEVEL II	Speciating biogenic terpenoids for natural background aerosol estimation.
RM0115	Scientific Basis of an Improved EPA Policy on Control of Organic Emissions for Ambient Ozone Reduction. <i>Journal of Air & Waste Management Assoc.</i> , 49:831-838 (1999)	Dr. Basil Dimitriadis (100%) <i>NERL, RTP, NC</i>	LEVEL II	For providing improved scientific understanding and bases to those responsible for or having a stake in development of emission control strategies for ambient ozone reduction.
HE0126	Neuropeptides and capsaicin stimulate the release of inflammatory cytokines in a human bronchial epithelial cell line. <i>Neuropeptides</i> , 33(6):447-456 (1999) (Two additional papers were part of this nomination)	Dr. Bellina Veronesi (85%) Ms. Jacqueline D. Carter (13%) Dr. Robert B. Devlin (2%) <i>NHEERL, RTP, NC</i>	LEVEL II	This research demonstrates that the surface charge of PM particles can stimulate cellular inflammation through activation of acid-sensitive receptors found on target epithelial cells and sensory nerve fibers that enervate the airways. As such, these data offer a unifying hypothesis, linking the lungs and nervous system, to explain the chronic inflammation associated with PM that contributes to human morbidity.

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Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
Nominations Recommended for a Level III Award (\$1,000) - Total of Twenty-Nine				
CS0002	<p>Emissions of Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzofurans from the Open Burning of Household Waste in Barrels. <i>Environmental Science & Technology</i>, 34(3):377-384 (2000)</p> <p>(One additional paper was part of this nomination)</p>	<p>Dr. Paul M. Lemieux (40%) Dr. Brian Gullett (30%) Mr. Dwain Winters (10%)</p> <p><i>NRMRL, RTP, NC</i></p>	LEVEL III	For performing research to estimate the emissions of dioxins from uncontrolled combustion of household waste in barrels.
CS0005	<p>Land Treatment of PAH-contaminated Soil: Performance Measured by Chemical and Toxicity Assays. <i>Environmental Science & Technology</i>, 33(23):4310-4317 (1999)</p>	<p>Dr. Gregory Sayles (25%) Dr. Carolyn Acheson (15%) Dr. John Meier (10%) Dr. Lina Chang (10%)</p> <p><i>NRMRL, Cincinnati, OH</i></p>	LEVEL III	Use of chemical and toxicity assays to understand the performance of bioremediation of wood-treating impacted soil.
ER0014	<p>Adaptations of Wild Populations of the Estuarine Fish <i>Fundulus heteroclitus</i> to Persistent Environmental Contaminants. <i>Marine Biology</i>, 134:9-17 (1999)</p>	<p>Dr. Dianne Nacci (20%) Ms. Laura L. Coiro (15%) Ms. Denise M. Champlin (15%) Ms. Sarajo Jayaraman (15%) Mr. Richard A. McKinney (15%) Dr. Timothy R. Gleason (5%) Dr. Wayne R. Munns (5%)</p> <p><i>NHEERL, Narragansett, RI</i></p>	LEVEL III	Evolutionary effects of Dioxin-Like Contaminants on Wild Fish Populations
ER0015	<p>Evaluating perturbations and developing restoration strategies for inland wetlands in the Great Lake Basin. <i>Wetlands</i>, 19(4):789-820 (1999)</p>	<p>Dr. Naomi Detenbeck (60%)</p> <p><i>NHEERL, Duluth, MN</i></p>	LEVEL III	Linking ecological risk assessments to restoration strategies at the watershed scale.

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Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
ER0018	Carry-over effects of ozone on root growth and carbohydrate concentrations of ponderosa pine seedlings. <i>Tree Physiology</i> , 17:805-811 (1997)	Dr. Christian P. Anderson (40%) Dr. William E. Hogsett (40%) <i>NHREEL, Corvallis, OR</i>	LEVEL III	For contributions to understanding the cumulative impacts of ozone on plants.
ER0022	Use of periphyton assemblage as an index of biotic integrity. <i>Journal of the North American Benthological Society</i> , 19(1):50-67 (2000)	Dr. Brian H. Hill (75%) Dr. Frank H. McCormick (5%) <i>NCEA, Cincinnati, OH</i>	LEVEL III	For the Advancement of Biological Methods in Support of Water Quality Monitoring.
ER0025	Assessing Ecological Risk in Watersheds: A Case Study of Problem Formulation in the Big Darby Creek Watershed, Ohio. <i>Environmental Toxicology and Chemistry</i> , 19(4(2)):1082-1096 (2000)	Dr. Susan M. Cormier (50%) Dr. Susan B. Norton (25%) Timothy W. Neiheisel (5%) <i>NERL, Cincinnati, OH</i>	LEVEL III	For advancing watershed scale ecological risk assessment thereby helping to protect a valued river, the Big Darby Creek.
ER0032	Application of Computer-Aided Tomography (CT) to the Study of Estuarine Benthic Communities. <i>Ecological Applications</i> , 9(3):1050-1058 (1999)	Dr. Kenneth T. Perez (21%) Dr. Earl W. Davey (21%) Mr. John A. Cardin (21%) Ms. Roxanne L. Johnson (21%) <i>NHEERL, Narragansett, RI</i>	LEVEL III	Application of CaT Scan Imaging to Environmental Assessments of Benthic Communities.
HE0034	Public health implications of 1990 air toxics concentrations across the United States. <i>Environmental Health Perspectives</i> , 106(5):245-251 (1998) (Four additional papers were part of this nomination)	Tracey J. Woodruff (27%) Daniel A. Axelrad (27%) Jane C. Caldwell (27%) Vincent James Cogliano (4%) <i>OPEI, Washington, DC</i>	LEVEL III	The Cumulative Exposure Project: EPA's first comprehensive national characterization of ambient air toxics concentrations.

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Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
HE0040	<p>Lung Cancer Among Workers in Chromium Chemical Production. <i>American Journal of Industrial Medicine</i>, 38(2):115-126 (2000)</p> <p>(One additional paper was part of this nomination)</p>	<p>Dr. Herman J. Gibb (50%) Dr. Paul F. Pinsky (20%)</p> <p>NCEA, Washington, DC</p>	LEVEL III	Most Detailed and Significant Study of the Lung Cancer and Clinical Irritation Risks from Chromium Exposure Ever Conducted.
HE0047	<p>Soluble Transition Metals Mediate Residual Oil Fly Ash Induced Acute Lung Injury. <i>Journal of Toxicology and Environmental Health</i>, 50:285-305 (1997)</p> <p>(Four additional papers were part of this nomination)</p>	<p>Dr. Kevin L. Dreher (30%) Mr. Richard H. Jaskot (15%) Mrs. Judy H. Richards (15%) Dr. Daniel L. Costa (10%) Mr. James R. Lehmann (5%) Mr. John K. McGee (5%) Dr. Andrew J. Ghio (5%)</p> <p>NHEERL, RTP, NC</p>	LEVEL III	For providing insight into “biologic plausibility” of metals as a likely causal constituent in the adverse responses observed in healthy and compromised subjects.
HE0050	<p>Quantitative Measurement of <i>Stachybotrys chartarum</i> conidia Using Real Time Detection of PCR Products with the TaqMan™ Fluorogenic Probe System. <i>Molecular and Cellular Probes</i>, 13(5):329-340 (1999)</p>	<p>Dr. Richard A. Haugland (50%) Dr. Stephen J. Vesper (40%) Dr. Larry J. Wymer (10%)</p> <p>NERL, Cincinnati, OH</p>	LEVEL III	For the development of a rapid methods for identifying and quantifying fungi in the environment.
HE0051	<p>Respiratory dose of inhaled ultrafine particles in healthy adults. <i>Philosophical Transactions of Royal Society of London</i>. 358:2693-2705 (2000)</p> <p>(One additional paper was part of this nomination)</p>	<p>Dr. Chong S. Kim (60%)</p> <p>NHEERL, RTP, NC</p>	LEVEL III	Exposure-dose relationship of inhaled ultrafine particles in healthy men and women.

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Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
HE0054	<p>Cancer mortality in four northern wheat-producing states. <i>Environmental Health Perspectives</i>, 108:873-881 (2000) on-line</p> <p>(One additional paper was part of this nomination)</p>	<p>Dr. Dina M. Schreinemachers (75%) Dr. John P. Creason (15%)</p> <p><i>NHEERL, RTP, NC</i></p>	LEVEL III	A contribution to the understanding of the effects of environmental exposures to pesticides.
HE0056	<p>Monograph on Trichloroethylene Health Risks-State of the Science. <i>Environmental Health Perspectives Supplements</i>, 108(supp 2):159-363 (2000)</p>	<p>Ms. Cheryl Siegal Scott (32%) Dr. V. James Cogliano (8%) Dr. Chao W. Chen (4%) Mr. John Schaum (2%) Dr. Chieh Wu (2%) Dr. Jean C. Parker (2%) Dr. Martha Moore (2%) Ms. Karen Harrington-Brock (2%) Dr. John Lipscomb (1%) Dr. William K. Boyes (1%) Dr. Philip J. Bushnell (1%) Dr. Kevin M. Crofton (1%) Dr. Marina Evans (1%) Dr. Jane Ellen Simmons (1%)</p> <p><i>NCEA, Washington, DC</i></p>	LEVEL III	The monograph containing the state of the science papers on trichloroethylene (TCE) toxicity contributes to the field of risk assessment by beginning to alter the scientific discussion on trichloroethylene and through the advancement of methodology used to assess potential cancer and noncancer health risks associated with TCE. This work which represents a collaborative effort between the National Center for Environmental Assessment and the National Health and Environmental Effects Research Laboratory will be essential to a risk characterization of trichloroethylene.
HE0057	<p>Gestational exposure to methylmercury alters the development pattern of trk-like immunoreactivity in the rat brain and results in cortical dysmorphology. <i>Development Brain Res.</i>, 109(1):13-31 (1998)</p> <p>(Two additional papers were part of this nomination)</p>	<p>Dr. Stan Barone, Jr. (40%) Ms. Najwa Haykal Coates (25%) Dr. William R. Mundy (20%) Dr. Tim Shafer (5%) Dr. Hugh A. Tilson (5%)</p> <p><i>NHEERL, RTP, NC</i></p>	LEVEL III	Changes in Neurotrophic Factor Expression and Signaling as Markers of Development Neurotoxicity.

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Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
MM0060	Temporal Changes in Purity and Specific Activity of Tritium-Labeled 2,3,7,8-Tetrachlorodibenzo-p-dioxin: Radiopurity Model for Toxicology. <i>Environmental Science and Technology</i> , 33(20):3558-3567 (1999)	Dr. Joseph D. Fernandez (35%) Dr. Philip M. Cook (35%) Mr. Brian C. Butterworth (20%) <i>NHEERL, Duluth, MN</i>	LEVEL III	New methods for quantifying dose in toxicity studies using tritium labeled chemicals followed the discovery of unknown reactions of TCDD.
MM0061	Microextraction of Nine Haloacetic Acids in Drinking Water at Microgram per Liter Levels with Electrospray-Mass Spectrometry of Stable Association Complexes. <i>Analytical Chemistry</i> , 72(10):2308-2812 (2000) (Three additional papers were part of this nomination)	Dr. Matthew L. Magnuson (37.5%) Catherine A. Kelty (37.5%) Dr. Thomas F. Speth (10%) Edward T. Urbansky (15%) <i>NRMRL, Cincinnati, OH</i>	LEVEL III	Developments in the Mass Spectrometric Analysis of Drinking Water Contaminants: Disinfection Byproducts and Contaminant Candidate List Compounds.
MM0063	Effects of water quality on development of <i>Xenopus laevis</i> : A frog embryo teratogenesis assay- <i>Xenopus</i> assessment of surface water associated with malformations in native anurans. <i>Environmental Toxicology and Chemistry</i> , 19(8):2114-2121 (2000)	Mr. Joseph E. Tietge (40%) Dr. Gerald T. Ankley (10%) Mr. David L. DeFoe (20%) Mr. Gary W. Holcombe (20%) Ms. Kathleen M. Jensen (10%) <i>NHEERL, Duluth, MN</i>	LEVEL III	Advancement of diagnostic techniques to identify the causes of amphibian malformations and population declines.
TF0076	Handbook of Property Estimation Methods for Chemicals: Environmental and Health Sciences. 2000	Dr. Robert S. Boethling (45%) Dr. David Lynch (5%) Dr. Stephen C. Devito (5%) Dr. N. Lee Wolfe (5%) <i>OPPTS, Washington, DC</i>	LEVEL III	For substantial contributions to the updated handbook of physical chemical property estimation methods, a primary reference document for researchers and scientists in the field of environmental fate and transport. The work comprehensively reviews the many recent improvements in chemical property and environmental fate estimation methods, and focuses on the properties most critical to fate assessment.

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Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
TF0077	Ratio of the Concentration of Anthraquinone to Anthracene in Coastal Marine Sediments. <i>Chemosphere</i> , 38(10):15 (1999)	Mr. Richard A. McKinney (50%) Dr. Richard J. Pruell (25%) Dr. Robert M. Burgess (25%) <i>NHEERL, Narragansett, RI</i>	LEVEL III	Ratio of anthraquinone to anthracene as an indicator of the source of contaminant input to coastal marine sediments.
TF0084	The Application of In Situ Permeable Reactive (zero-valent iron) Barrier Technology for the Remediation of Chromate-Contaminated Groundwater: A Field Test. <i>Applied Geochemistry</i> , 14(8):989-1000 (1999)	Dr. Robert W. Puls (75%) Ms. Cynthia J. Paul (15%) <i>NRMRL, Ada, OK</i>	LEVEL III	Research and development of permeable reactive barriers as an innovative in situ remedial approach for the cost-effective restoration of contaminated ground water resources.
TF0088	Influence of environmental changes on degradation of chiral pollutants in soils. <i>Nature</i> , 401:898-901 (1999)	Dr. David L. Lewis (35%) Dr. Arthur W. Garrison (30%) <i>NERL, Athens, GA</i>	LEVEL III	For research demonstrating that environmental changes may alter the relative persistence of the enantiomers of chiral pollutants.
TF0090	Sediment-Mediated Reduction of 2,4,6-Trinitrotoluene and Fate of the Resulting Aromatic (Poly)amines. <i>Environmental Science and Technology</i> , 33(15):2617-2625 (1999)	Dr. Eric J. Weber (60%) <i>NERL, Athens, GA</i>	LEVEL III	For elucidating pathways for the reductive transformation of munitions in environmental systems.
TF0094	Effect of Redox Zonation on the Reductive Transformation of p-Cyanonitrobenzene in a Laboratory Sediment Column. <i>Environmental Science and Technology</i> , 34 (17):3617-3622 (2000)	Dr. Eric J. Weber (25%) Ms. Dalizza Colón (25%) Dr. Caroline L. Tebes-Stevens (25%) <i>NERL, Athens, GA</i>	LEVEL III	For contributing to the elucidation of the factors that control reductive transformations in the environment.

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Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
TF0096	Quantitation of perchlorate ion by electrospray ionization mass spectrometry (ESI-MS) using stable association complexes with organic cations and bases to enhance selectivity. <i>Journal of Analytical Atomic Spectrometry, 14(12):1861-1866 (1999)</i> (Five additional papers were part of this nomination)	Mr. Edward T. Urbansky (44%) Dr. Matthew L. Magnuson (34%) Ms. Catherine A. Kelty (5%) Ms. Stephanie K. Brown (4%) <i>NRMRL, Cincinnati, OH</i>	LEVEL III	For monitoring perchlorate in environmental samples using adapted chromatographic and new mass spectrometric methods.
RA0097	Monograph entitled: "Identifying Critical Windows of Exposure for Children's Health" composed of 15 reports. <i>Environmental Health Perspectives, 108(supp3):449-597 (2000)</i>	Dr. Sherry G. Selevan (33 a %) Dr. Carole A. Kimmel (33 a %) Dr. Pauline Mendola (33 a %) <i>NCEA, Washington, DC</i>	LEVEL III	For outstanding work to compile and integrate information on critical windows of exposure for children's health effects and its use in risk assessment.
RA0108	Can fluoridation affect lead(II) in potable water? Hexafluorosilicate and fluoride equilibria in aqueous solution. <i>International Journal of Environmental Studies (B), 57:597-637 (2000)</i>	Mr. Edward T. Urbansky (60%) Mr. Michael R. Schock (40%) <i>NRMRL, Cincinnati, OH</i>	LEVEL III	For a comprehensive review of hexafluorosilicate and fluoride chemistry and its application to potable water treatment.
RM0117	Locating Leaks with Acoustic Technology. <i>Journal of the American Water Works Association, 92(7):57-66 (2000)</i>	Mr. Anthony N. Tafuri (100%) <i>NRMRL, Cincinnati, OH</i>	LEVEL III	Development of acoustic technology for more accurate detection and location of small leaks in water distribution systems.
Nominations Recommended for Honorable Mention (No Cash Award)- Total of Twenty-One				

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Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
CS0004	<p>Comparison of Particle Size Distributions and Elemental Partitioning from the Combustion of Pulverized Coal and Residual Fuel Oil. <i>Journal of the Air & Water Management Association</i>, 50:1532-1544 (2000)</p>	<p>Dr. William P. Linak (40%) Dr. C Andrew Miller (40%)</p> <p><i>NRMRL, RTP, NC</i></p>	Honorable Mention	<p>For advances in the understanding of the mechanisms governing the formation of fine particles from coal and fuel oil combustion.</p>
CS0012	<p>On-Road Emission Sampling of a Heavy-Duty Diesel Vehicle for Polychlorinated Dibenzo-p-dioxins and Polychlorinated Dibenzo Furans. <i>Environmental Science and Technology</i>, 10.1021/es991236+(2000 web edition)</p>	<p>Mr. Jeffrey V. Ryan (50%) Dr. Brian K. Gullett (50%)</p> <p><i>NRMRL, RTP, NC</i></p>	Honorable Mention	<p>Development of on-road methodology to characterize PCDD/PCDF emissions from Heavy Duty Diesel Vehicles</p>
ER0019	<p>Tropical Mexico's recent land-use change: a region's contribution to the global carbon cycle. <i>Ecological Applications</i>, 10(5):1426-1441 (2000)</p>	<p>Mr. Michael A. Cairns (55%)</p> <p><i>NHEERL, Corvallis, OR</i></p>	Honorable Mention	
ER0020	<p>The effect of irradiance spectra on the photo-induced toxicity of three polycyclic aromatic hydrocarbons. <i>Environmental Toxicology and Chemistry</i>, 19(5):1389-1396 (2000)</p>	<p>Dr. Stephen A. Diamond (50%) Dr. David R. Mount (10%) Dr. Lawrence P. Burkhard (10%) Dr. Gerald T. Ankley (10%) Ms. Elizabeth A. Makynen (10%) Mr. Edward N. Leonard (10%)</p> <p><i>NHEERL, Duluth, MN</i></p>	Honorable Mention	<p>In recognition of research contributing significantly to the incorporation of photoactivation in assessment of the ecological risk of polycyclic aromatic hydrocarbons.</p>

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Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
ER0024	<p>The significance of growth in <u>Chironomus tentans</u> sediment toxicity tests: relationship to reproduction and demographic endpoints. <i>Environmental Toxicology and Chemistry</i>, 16(2):336-345 (1997)</p> <p>(One additional paper was part of this nomination)</p>	<p>Dr. Gerald T. Ankley (35%) Mr. Duane Benoit (30%)</p> <p><i>NHEERL, Duluth, MN</i></p>	Honorable Mention	Development of chronic methods and validation of sublethal endpoints for <u>Chironomus tentans</u> toxicity testing to assess the effects of contaminated sediments.
ER0030	<p>The Chemistry and Toxicity of Sediment Affected by Oil from the North Cape Spilled into Rhode Island Sound. <i>Marine Pollution Bulletin</i>, 38(4):314-323(1999)</p>	<p>Dr. Kay Ho (30%) Dr. James S. Latimer (15%) Dr. Richard J. Pruell (15%) Ms. Marguerite Pelletier (15%) Mr. Richard McKinney (5%) Ms. Saroja Jayaraman (5%)</p> <p><i>NHEERL, Narragansett, RI</i></p>	Honorable Mention	The development of relationships between chemistry and toxicity in sediments after an oil spill.
HE0041	<p>Dose-response relationships for polyhalogenated dibenzo-p-dioxin and dibenzofurans following subchronic treatment in mice: CYP1A1 and CYP1A2 enzyme activity in liver, lung and skin. <i>Toxicology and Applied Pharmacology</i>, 147(2):267-280 (1997)</p> <p>(One additional paper was part of this nomination)</p>	<p>Dr. Michael DeVito (40%) Dr. Linda Birnbaum (20%) Ms. Janet Diliberto (10%) Mr. David Ross (25%)</p> <p><i>NHEERL, RTP, NC</i></p>	Honorable Mention	Development of methodologies to determine the relative potencies of toxicants.

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Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
HE0043	<p>Role of CYP1A2 in Hepatic Sequestration of Dioxin: Studies Using CYP1A2 Knock-Out Mice. <i>Biochemical and Biophysical Research Communications</i>, 236:431-433 (1997)</p> <p>(One additional paper was part of this nomination)</p>	<p>Ms. Janet Diliberto (70%) Dr. Linda Birnbaum (25%)</p> <p><i>NHEERL, RTP, NC</i></p>	Honorable Mention	In recognition of research using knockout mice to determine the role of CYP1A2 on the pharmacokinetics of dioxin.
HE0045	<p>Ozone effects on airway responsiveness, lung injury, and inflammation. Comparative rat strain and in vivo/in vitro investigations. <i>Inhalation Toxicology</i>, 11:1015-1040 (1999)</p>	<p>Dr. Janice A. Dye (50%) Dr. Michael C. Madden (10%) Ms. Judy H. Richards (10%) Mr. James R. Lehmann (10%) Dr. Robert B. Devlin (10%) Dr. Daniel L. Costa (10%)</p> <p><i>NHEERL, RTP, NC</i></p>	Honorable Mention	For the comprehensive and critical evaluation of the parallelisms between <i>in vivo</i> and <i>in vitro</i> investigations on ozone-induced pulmonary health effects.
HE0049	<p>Application of a Probabilistic Risk Assessment Methodology to a Lead Smelter Site. <i>Human and Ecological Risk Assessment</i>, 5(4):845-868 (1999)</p>	<p>Dr. Susan Griffin (60%)</p> <p><i>Region 8 (EPR-PS), Denver, CO</i></p>	Honorable Mention	The use of a novel probabilistic technique to characterize variability and uncertainty in childhood lead exposure at a Superfund smelter site.
HE0053	<p>A Modeling Framework for Estimating Children's Residential Exposure and Dose to Chlorpyrifos via Dermal Residue Contact and Nondietary Ingestion. <i>Environmental Health Perspectives</i>, 108(6):505-514 (2000)</p>	<p>Dr. Valerie Zartarian (50%) Dr. Haluk Ozkaynak (30%) Dr. Janet Burke (5%) Dr. Marcia (Zufall) (5%) Dr. Marc Rigas (5%) Dr. Edwin Furtaw (5%)</p> <p><i>NERL, RTP, NC</i></p>	Honorable Mention	A novel model to study children's residential exposure to pesticides from multiple pathways.

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Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
MM0062	Ascorbic acid treatment to reduce residual halogen-based oxidants prior to the determination of halogenated disinfection byproducts in potable water. <i>Journal of Environmental Monitoring</i> , 1(6):471-476 (1999) (Two additional papers were part of this nomination)	Mr. Edward T. Urbansky (75%) Ms. Kathleen M. Schenck (15%) <i>NRMRL, Cincinnati, OH</i>	Honorable Mention	For advances in methods used to determine disinfection byproducts and their toxicity in the analysis of potable water.
MM0074	Fluorescent in situ detection of <i>Encephalitozoon hellem</i> spores with a 6-carboxyfluorescein-labeled ribosomal RNA-targeted oligonucleotide probe. <i>Journal of Eukaryotic Microbiology</i> , 47(3):299-308 (2000)	Dr. Frank W. Schaefer, III (30%) Dr. H.D. Alan Lindquist (40%) <i>NERL, Cincinnati, OH</i>	Honorable Mention	For a key contribution in development of a detection method for microsporidian parasites in water.
TF0078	Bioavailability and trophic transfer of humic-bound copper from bacteria to zooplankton. <i>Marine Ecol. Prog. Ser.</i> , 187:67-75 (1999) (One additional paper was part of this nomination)	Dr. Emile M. Lores (80%) <i>NHEERL, Gulf Breeze, FL</i>	Honorable Mention	For Contributing to the Understanding of the Bioavailability of Copper to Copepods and other marine organisms.
TF0079	Toward error analysis of large-scale forest carbon budgets. <i>Global Ecology and Biogeography</i> , 9:305-313 (2000)	Dr. Donald L. Phillips (85%) <i>NHEERL, Corvallis, OR</i>	Honorable Mention	Quantifying uncertainties in monitoring forest carbon stocks on a national scale.
TF0080	A Two-Region Nonequilibrium Model for Solute Transport in Solution Conduits in Karstic Aquifers. <i>Journal of Contaminant Hydrology</i> , 44:329-351 (2000)	Malcolm S. Field (90%) Paul F. Pinsky (10%) <i>NCEA, Washington, DC</i>	Honorable Mention	Scientific and Technological Achievement Award for the development of a two-region nonequilibrium model to define solute transport in solution conduits in karstic aquifers.

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

Nom. #	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization
TF0091	Temporal Variability in the Basal Isoprene Emission Factor. <i>Tree Physiology</i> , 20(12):799-805 (2000)	Chris D. Geron, (80%) Robert R. Arnts (10%) <i>NRMRL, RTP, NC</i>	Honorable Mention	Temporal isoprene emission capacity explains observed air quality anomalies.
TF0095	Phytodegradation of p,p'-DDT and the Enantiomers of o,p'-DDT. <i>Environmental Science and Technology</i> , 34(9):1663-1670 (2000)	Dr. Arthur W. Garrison (35%) Dr. J. Jackson Ellington (5%) Dr. William J. Jones (5%) Mr. Darrell Rennels (5%) Dr. N. Lee Wolfe (10%) <i>NERL, Athens, GA</i>	Honorable Mention	For research indicating the reaction mechanism and showing the feasibility of degradation of DDT by common plants.
RA0098	A survey of EPA/OPP and open literature on selected pesticide chemicals. II. Mutagenicity and carcinogenicity of selected chloroacetanilides and related compounds. <i>Mutation Research</i> , 443:183-221 (1999)	Dr. Kerry L. Dearfield (35%) Ms. Nancy E. McCarroll (30%) Dr. Alberto Protzel (10%) Dr. Michael D. Waters (15%) <i>OSP/ORD, Washington, DC</i>	Honorable Mention	For one of the first published EPA risk assessments to integrate a mode of action for mutagenicity and carcinogenicity.
RA0110	Immunoassay Techniques in Environmental Analysis. <i>Encyclopedia of Analytical Chemistry: Instrumentation and Applications</i> , pp. 2653-2672 (2000)	Mr. Barry Lesnik (100%) <i>OSWER, Washington, DC</i>	Honorable Mention	In recognition of outstanding contribution to the field of immunoassay chemistry applications in EPA's waste programs
RA0113	Radically Contested Assertions in Ecosystem Management. <i>Journal of Sustainable Forestry</i> , 9(1-2):21-34 (1999)	Dr. Robert T. Lackey (100%) <i>NHEERL, Corvallis, OR</i>	Honorable Mention	For scientific and technical achievement in advancing the understanding of ecosystem management and the interface between science and policy.

Key to Acronyms used in the above Table:

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

NCEA	National Center for Environmental Assessment
NERL	National Exposure Research Laboratory
NHEERL	National Health and Environmental Effects Laboratory
NRMRL	National Risk Management Research Laboratory
NVFEL	National Vehicle and Fuels Emissions Laboratory
OPPTS	Office of Prevention, Pesticides and Toxic Substances
OSP	Office of Science Policy
OSWER	Office Solid Waste and Emergency Response
RTP	Research Triangle Park

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