

September 29, 1998

EPA-SAB-EC-98-012

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 1997
Scientific and Technological Achievement Awards (STAA) Program

Dear Ms. Browner:

The Science Advisory Board's (SAB) 1997 Scientific and Technological Achievement Awards (STAA) Subcommittee has completed its review of the nominations submitted by the Agency for this year's 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). The Agency submitted a total of 106 nominations from among the first eight categories. Nominations were not submitted for the last three categories this year (SS, EE, and ET). During its review, the Subcommittee combined several individual nominations and re-categorized several others, reducing the final number of nominations to 104, of which 35 were recommended for an award. This included recommendations for awards in seven of the eight categories for which nominations were submitted (all but category IR). For the third year, an award was recommended in the Risk Management and Policy Formulation category. 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. In addition, the Subcommittee is recommending nineteen papers for Honorable Mention. The authors recommended for awards this year are from 12 research laboratories 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 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 publish the data and technical analysis which address aspects of the Agency's policies and regulations.

The Subcommittee noted with great disappointment, the lack of nominations from Program areas other than ORD. With the exception of a single nomination from Region V, 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 the nomination packages that have improved the program and 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 newly issued 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,

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

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

NOTICE

This report has been written as a 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 faced by 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 or other agencies in the Federal government. Mention of trade names or commercial products does not constitute a recommendation for use.

ABSTRACT

This report represents the conclusions and recommendations of the U.S. Environmental Protection Agency's Science Advisory Board regarding the 1997 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 106 nominations from the first eight 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 104. These nominations contained over 125 scientific and technical papers. Of these, the Subcommittee recommended 36 nominations (35 percent of the nominations) for awards at three levels and also recommended that nineteen additional papers be recognized with Honorable Mention. The Subcommittee recommended awards for nominations submitted by 12 ORD research laboratories. 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, Scientific Achievements, Peer-Review

**ENVIRONMENTAL PROTECTION AGENCY
SCIENCE ADVISORY BOARD
1997 SCIENTIFIC AND TECHNOLOGICAL
ACHIEVEMENT AWARDS SUBCOMMITTEE ROSTER**

August 27-28, 1998 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

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

SCIENCE ADVISORY BOARD STAFF

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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 106 nominations for the 1997 program that were submitted by EPA research laboratory directors and program office directors. After review, the Subcommittee revised the number of nominations to 104 (including over 125 individual scientific and technical papers). The Subcommittee met in Washington, DC, on August 27-28, 1998, 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 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 36 nominations for awards and recommended that nineteen 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 nominations from 12 ORD research laboratories.

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 1997 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 1998, the Office of Research and Development (ORD) provided the SAB with copies of 106 nominations (later reduced to 104 nominations by the Subcommittee), and the 1997 STAA Nomination Procedures and Guidelines, which describe 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 eight categories this year. ORD grouped the papers into these eight categories of science and technology¹, and screened the papers for conformance with the nomination guidelines. No nominations were submitted in the other three categories this year.²

As described in the 1997 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

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), and Integrated Risk Management (IR).

² These categories are: Social Science Research, Environmental Education, and Environmental Trends for Drivers of Future Risk.

consequences and contribute as an important scientific/technological achievement 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 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 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 chooses 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 also asked to rank their own expertise in the field of science and technology addressed by each paper they selected for review. These rankings were considered by the Subcommittee during the evaluation of each paper. Each paper 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 August 27-28, 1998. Papers 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. Papers 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 papers, 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 ability of 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 Ranking	
HE9999	Risk 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. Smith	3	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 1997 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 August 27-28, 1998, 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) and the Government in the Sunshine Act (5 USC 552(b)(c)(2) and (c)(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 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) at its September 11, 1998 public teleconference meeting in Washington, DC. At that meeting, the Subcommittee report, less the actual award recommendations (Appendix B), was made available to the EC and the interested public.

⁴ 63(155) Federal Register 43175, August 12, 1998.

3. EVALUATION OF THE 1997 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 comparable to previous years. The Agency should continue to focus on improving 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 authors whose papers were recommended for awards this year represent 12 ORD research laboratories. 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 lack of nominations from outside of ORD was a great disappointment to the Subcommittee this year and contrasts poorly to last year when there were more non-ORD submissions. While we recognize that most of the in-house research is conducted by ORD scientists in ORD laboratories, we want to encourage, and 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 and those that directly support 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) on page 7, 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.

The 1997 STAA program represents the third time that the STAA 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 the Risk Management and Policy Formulation 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.

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) This year, one of the nominations contained ten individual papers. The reviewers found this excessive and request that no more than three relevant papers (part of a set or series) be included as part of the nomination. Where appropriate, additional materials may be included, such as copies of previously published background work.
- b) 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 1997 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 (62%) that the quality of these papers has greatly 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 8 numbered sections for information relevant to the author or the nomination. The Subcommittee would like to see more emphasis on the merits of the nomination (#2), the significance or impact of the research (#3), the relevance of the scientific contribution (#4); and the extent to which environmental protection has been strengthened (#5), and less on the individual nominee's accomplishments (#1). We suggest that appropriate levels of evidence be given for each, but that in aggregate, the total should not exceed two typewritten pages.
- f) 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 in the application package (item #8 of the section on Justification) that reflects the degree to which the nominated paper(s) have gone through peer review. Some of the statements with this year's nominations have been weak in this regard.
- g) To reduce privacy concerns, the Subcommittee requests that the nominations submitted for review not contain the authors social security number.

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. 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.

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 12 EPA research laboratories. Awards were recommended for seven of the eleven nomination categories, and for seven of the eight categories for which nominations were submitted. A total of 36 nominations were recommended for awards. A summary of the distribution of award recommendations among categories is presented in Table II. There were originally 106 nominations with over 125 individual papers submitted. The Subcommittee combined several individual nominations and re-categorized several others, reducing the final number of nominations to 104, of which 55 were recommended for an award (36) or honorable mention (19). 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 1997 Award Recommendations

Nomination Categories *	# Nom.	Award Levels				%	Hon. Men.
		I	II	III	Tot		
Control Systems & Technology	12	0	1	4	5	42%	3
Ecology, Ecosystem Risk Assessment & Protection	20	0	4	1	5	25%	6
Health Effects, Health Risk Assessment	25	1	2	4	7	28%	6
Monitoring & Measurement Methods	13	0	0	4	4	31%	2
Transport and Fate	14	0	2	4	6	43%	1
Review Articles	13	2	2	4	8	62%	1
Risk Management & Policy Formulation	6	0	0	1	1	17%	0
Integrated Risk Assessment	1	0	0	0	0	0	0
TOTALS:	104	3	11	22	36	35%	19

* Categories listed in the “1997 Nomination Procedures and Guidelines.” Nominations were not submitted to the SAB in the following categories: Social Science Research, Environmental Education, and Environmental Trends for Drivers of Future Risk.

3.3.1 Level I Awards

Three Level I awards were recommended to a total of seven scientists and engineers in three EPA research laboratories. One award was recommended to scientists and engineers in the National Exposure Research Laboratory in Research Triangle Park, NC. One award was recommended to scientists and engineers in the National Health and Environmental Effects Research Laboratory in Research Triangle Park, NC. One award was recommended to scientists and engineers in the National Health and Environmental Effects Research Laboratory in Corvallis, OR. Please see page B-1 of Appendix B for details.

3.3.2 Level II Awards

Eleven Level II awards were recommended to a total of 17 scientists and engineers representing eight EPA research laboratories. Please see pages B-2 through B-6 of Appendix B for details.

3.3.3 Level III Awards

Twenty-one Level III awards were recommended a total of 45 scientists and engineers representing eight EPA research laboratories. Please see pages B-7 through B-13 of Appendix B for details.

3.3.4 Honorable Mention

Nineteen nominations were judged as being worthy of an Honorable Mention. These included 50 scientists and engineers from nine EPA research laboratories. Please see pages B-14 through B-19 of Appendix B for details.

Appendix A - Re-Categorized Nominations

Original Nomination Number(s)	New Category	Remarks
EC0014	Review Article (RA)	Review Paper
HE0051	Review Article (RA)	Review Paper
MM0005	Review Article (RA)	Review Paper
MM0017 EC0045	Combined into a single Nomination in EC	Related
EC0092 EC0094	Combined into a single Nomination; no change in Category	Related

Appendix B - Nominations Recommended for Awards

This Appendix identifies the 36 nominations recommended for Level I, II, and III awards and the 19 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-6) provides information on the Level II award recommendations. The third part (pages B-7 to B-13) provides information on the Level III award recommendations. The fourth part (pages B-14 to B-19) 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. Finally, ineligible authors (non-EPA) are also listed for completeness. 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.

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AN SAB REPORT: RECOMMENDATIONS ON THE 1 SCIENTIFIC AND TECHNOLOGICAL ACHIEVEMENT AWARD (STAA) NOMINATIONS

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

**Appendix B -
FY1997 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 <i>(SAB Comments in paren.)</i>
Nominations Recommended for a Level I Award (\$5,000) - Total of three				
HE0099	Discriminant analysis indicates a single sperm protein (SP22) is predictive of fertility following exposure to epididymal toxicants (Journal of Andrology, 18 (2):139-150, 1997)	Dr. Gary R. Klinefelter (64%) Dr. John W. Laskey (12%) Janet Ferrell (8%) Juan D. Suarez (8%) Naomi L. Roberts (8%) NHEERL Research Triangle Park, NC	LEVEL I	A novel sperm protein (SP22) predicts the fertility of sperm.
RA0090	Hydrochemistry of forested catchments (Annual Review of Earth and Planetary Sciences, 25 :23-59, 1997)	Dr. M. Robbins Church (100%) NHEERL Corvallis, OR	LEVEL I	For outstanding contributions to the review and synthesis of wide-ranging multi-disciplinary scientific advances in the field of watershed hydrochemistry
RA0096	Sampling organic chemicals in air (Principles of Environment Sampling, American Chemical Society Washington, DC 1996)	Dr. Robert G. Lewis (75%) NERL Research Triangle Park, NC (Ineligible author: Dr. Sydney M. Gordon)	LEVEL I	For significant contributions to the understanding of the science of air pollution monitoring through the comprehensive review and interpretation of air sampling methodology for organic chemicals.

* 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	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (<i>SAB Comments in paren.</i>)
Nominations Recommended for a Level II Award (\$2,500) - Total of eleven				
CS0068	Base-catalyzed destruction of PCBS new donors, new transfer agents/catalysts (Industrial and Engineering Chemistry Research, 36 (5):1580-1585,1997)	Dr. F. K. Kawahara (50%) NRMRL Cincinnati, OH (Ineligible author: Dr. P. M. Michalakos)	LEVEL II	For research in the use of hydrogen transfer agents and catalysts to improve base-catalyzed destruction.
EC0022	1. Trophic analysis of ruffe (<i>Gymnocephalus cernuus</i>) and white perch (<i>Morone americana</i>) in a lake superior food web, using stable isotope techniques (Journal of Great Lakes Research, 22 (2):436-443,1996) 2. Analysis of a lake superior coastal food web with stable isotope techniques (Limnology and Oceanography, 41 (1):136-146, 1996)	Dr. Michael E. Sierszen (50%) Dr. Janet R. Keough (40%) NHEERL Duluth, MN (Ineligible author: Ms. Cynthia A. Hagley)	LEVEL II	Analyses of great lakes coastal food webs.
EC0026	Effects of moisture and burning on soil-atmosphere exchange of trace carbon gases in a southern african savanna (Journal of Geophysical Research, 101 (D19):23,699-23,706,1996)	Dr. Richard G. Zepp (40%) Dr. Roger A. Burke (35%) NERL Athens, GA (Ineligible authors: Dr. William L. Miller, Dr. Dirk A. B. Parsons and Dr. Mary C. Scholes)	LEVEL II	Fire and moisture effect on savanna soil fluxes of radiatively and chemically-important trace gases.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (<i>SAB Comments in paren.</i>)
EC0041	Temporal and spatial variability in water quality of wetlands in the Minneapolis/St. Paul, MN metropolitan area: implications for monitoring strategies and designs (Environmental Monitoring and Assessment, 40 (1):11-40,1996)	Dr. Naomi Detenbeck (75%) NHEERL Duluth, MN (Ineligible authors: Ms. Debra L. Taylor, Ms. Ann Lima and Ms. Cynthia Hagley)	LEVEL II	Development of efficient monitoring strategies for wetlands.
EC0044	Responses of embryonic and larval inland silversides, <i>Menidia beryllina</i> , to a water-soluble fraction formed during biodegradation of artificially weathered alaska north slope crude oil (Archives of Environmental Contamination and Toxicology, 31 :410-419, 1996)	Dr. D. P. Middaugh (40%) Dr. P. J. Chapman (40%) NHEERL Gulf Breeze, FL (Ineligible author: Mr. M. E. Shelton)	LEVEL II	For discovery of <i>de novo</i> compounds during biodegradation of alaskan north slope oil and quantifying teratogenic effects of these compounds in fish embryos.
HE0054	1. Computer simulations of human lung structures for medical applications (Computers in Biology and Medicine, 25 (5):431-446, 1995) 2. Computer model of human lung morphology to complement SPECT analyses (Journal of Bio-Medical Computing, 40 :5-16,1995) 3. Three-dimensional description of pulmonary deposition of inhaled aerosol using data from multimodality imaging (Journal of Nuclear Medicine, 37 :873-877,1995)	Dr. Ted Martonen (37%) NHEERL Research Triangle Park, NC (Ineligible authors: Dr. Y. Yang, D. Hwang, Dr. J. Fleming, Mr. P Halson, Ms. E. Moore, Dr. J. Conway, Dr. M. Nassim, Mr. A. Bailey, Dr. S. Holgate and Dr. A. Hashish)	LEVEL II	Supercomputer models of human lungs for health effects studies.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (SAB Comments in paren.)
HE0104	<p>1. Mutation spectra of glu-p-1 in salmonella: induction of hotspot frameshifts and site-specific base substitutions (Environmental and Molecular Mutagenesis, 24:11-22,1994)</p> <p>2. Mutation spectrum of a binary mixture of mutagens (methapyrilene and sodium azide) in strain TA1535 of Salmonella (Mutation Research, 323:35-39, 1994)</p> <p>3. Complex framshift mutations mediated by plasmid pKM101: mutational mechanisms deduced from 4-Aminobiphenyl-induced mutation spectra in Salmonella (Genetics, 136:731-746, 1994)</p> <p>4. Mutation spectra in salmonella of complex mixtures: comparison of urban air to benzo [a]pyrene (Environmental and Molecular Mutagenesis, 24:262-275,1994)</p> <p>5. Dichloroacetic acid and related compounds: induction of prophage in <i>E. coli</i> and mutagenicity and mutation spectra in salmonella TA100 (Mutagenesis, 9:429-437, 1994)</p> <p>6. Mutation spectra insalmonella of sunlight, white fluorescent light, and light from tanning salon beds: induction of tandem mutations and role on DNA repair (Mutation Research, 327:131-149, 1995)</p>	<p>Dr. David M. DeMarini (36%) Ms. Melissa L. Shelton (36%) Ms. Kathleen Patterson (1%)</p> <p>NHEERL Research Triangle Park, NC</p> <p>(Ineligible authors: Dr. Amal Abu-Shakra, Dr. John Ashby, Dr. Douglas A. Bell, Ms. Carolyn F. Felton, Dr. Siegfried Knasmuller, Dr. Jessie G. Levine, Ms. Erica Perry, Dr. Roel Schaaper and Dr. Leon F. Stankowski Jr.)</p>	LEVEL II	For elucidating molecular features of the salmonella assay and mutation spectra of complex envio.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (<i>SAB Comments in paren.</i>)
HE0104	<p>7. Mutagenicity and mutation spectra of 2-acetylaminofluorene at frameshift and base-substitution alleles in four DNA repair backgrounds of salmonella (Mutation Research, 327:75-86, 1995)</p> <p>8. Mutation spectrum of cigarette smoke condensate in salmonella: comparison to mutations in smoking-associated tumors (Carcinogenesis, 16(10):2535-2542, 1995)</p> <p>9. Mutation spectra in salmonella of chlorinated, chloraminated, or ozonated drinking water extracts: comparison to MX (Environmental and Molecular Mutagenesis, 26:270-285, 1995)</p> <p>10. Mutation spectra of chemical fractions of a complex mixture: role of nitroarenes in the mutagenic specificity of municipal waste incinerator emissions (Mutation Research, 349:1-20, 1996)</p>			
RA0053	Corrosion and solubility of lead in drinking water (Internal Corrosion of Water Distribution Systems, AWWA Research Foundation 1996)	<p>Mr. Michael R. Schock (80%)</p> <p>NRMRL Cincinnati, OH</p> <p>(Ineligible authors: Dr. Ivo Wagner and Dr. Roger Oliphant)</p>	LEVEL II	New research, critical review and evaluation of information, and synthesis of guidance for the control of lead in drinking water.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization <i>(SAB Comments in paren.)</i>
RA0087	Root biomass allocation in the world's upland forests (<i>Oecologia</i> , 111 (1):1-11, 1997)	Mr. Michael A. Cairns (45%) NHEERL Corvallis, OR (Ineligible authors: Dr. Sandra Brown, Ms. Eileen H. Helmer and Mr. Greg Baumgardner)	LEVEL II	For providing useful tools to estimate below ground forest biomass and demonstrating that the primary determinants of root mass are above ground biomass, latitude and tree age.
TF0010	Enrichment of marine sediment colloids with polychlorinated biphenyls: trends resulting from PCB solubility and chlorination (<i>Environmental Science and Technology</i> , 30 (8):2556-2566, 1996)	Dr. Robert Burgess (90%) NHEERL Narragansett, RI (Ineligible authors: Mr. Richard McKinney and Mr. William A. Brown)	LEVEL II	Geochemistry of marine sediment colloids and PCBs.
TF0046	Estimation of trends in atmospheric concentration of sulfate in the northeastern united states (<i>Journal of Air and Waste Management</i> , 46 :621-630, 1996)	Dr. Jack H. Shreffler (70%) Dr. H. Michael Barnes, Jr. (30%) NERL Research Triangle Park, NC	LEVEL II	This award is presented for a statistical analysis corroborating a reduction in sulfur emissions by detecting a downward trend in sulfate in the atmosphere over the eastern U.S.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (SAB Comments in paren.)
Nominations Recommended for a Level III Award (\$1,000) - Total of twenty-two				
CS0003	Reliability of surrogates for determining cryptosporidium removal (Journal of American Water Works Association, 89 (5):90-100, 1997)	Ms. Sylvan Y. Li (30%) Dr. James A. Goodrich (30%) Mr. James H. Owens (10%) Dr. Frank W. Schaefer, III (10%) Dr. Robert M. Clark (10%) NRMRL Cincinnati, OH (Ineligible author: Dr. Gene E. Willeke)	LEVEL III	Research identifying a reliable surrogate and protocol for evaluating <i>Cryptosporidium</i> removal from drinking water.
CS0058	Evaluating plant performance and endospores (Journal American Water Works Association, 88 (9):122-130,1996)	Dr. Eugene W. Rice (24%) Mr. Kim R. Fox (19%) Mr. Darren A. Lytle (19%) Mr. Clifford H. Johnson (19%) Mr. Richard J. Miltner (19%) NRMRL Cincinnati, OH	LEVEL III	Microbial surrogate technique for measuring water treatment plant performance.
CS0065	Thermal treatment of 1,2,3,4-tetrachloridibenzo-p-dioxin by reaction with Ca-based sorbents at 23-300 C (Environmental Science and Technology, 31 (7):1855-1862, 1997)	Dr. Brian K. Gullet (80%). NRMRL Research Triangle Park, NC (Ineligible authors: Mr. David Natschke and Mr. Kevin Bruce)	LEVEL III	Research into the chemical fate of toxic, chlorinated organics in air pollution control systems.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (SAB Comments in paren.)
CS0072	Waste and sorbent parameters affecting mechanisms of transient emissions from rotary kiln incineration (Combustion Science and Technology, 116-117 :499-515,1996)	Dr. Paul M. Lemieux (40%) Dr. William P. Linak (30%) NRMRL Research Triangle Park, NC (Ineligible author: Dr. Jost O. L. Wendt)	LEVEL III	For investigation into waste and sorbent parameters affecting mechanisms of transient emissions from rotary kiln incineration.
EC0045 (Combined with MM0017)	1. Laboratory effects of microcosm size and the pesticide chlorpyrifos on benthic macroinvertebrate colonization of soft estuarine sediments (Marine Environmental Research, 43 (4):243-263, 1997) 2. Macrobenthic community colonization and community development in dredged material disposal habitats off coastal Louisiana (Environmental Pollution, 96 (2):141-154, 1997)	Dr. David A. Flemer (40%) Mr. James C. Moore (10%) NHEERL Gulf Breeze, FL (Ineligible authors: Ms. Barbara F. Ruth and Dr. Charles M. Bundrick) Dr. David A. Flemer (50%) NHEERL Gulf Breeze, FL (Ineligible authors: Ms. Barbara F. Ruth, Dr. Charles M. Bundrick and Dr. Gary R. Gaston)	LEVEL III	For contributions into the development of laboratory methods of assessing the effects of pesticides on community-level benthic attributes. For contributions into the development of field methods for assessing the effects of dredge disposal waste on macrobenthic communities.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (SAB Comments in paren.)
HE0024	<p>1. Assessment of regional deposition of inhaled particles in human lungs by serial bolus delivery method (Journal of Applied Physiology, 81(5):2203-2213, 1996)</p> <p>2. Comparative measurement of lung deposition of inhaled fine particles in normal subjects and patients with obstructive airway disease (American Journal of Respiratory and Critical Care Medicine, 155:899-905, 1997)</p>	<p>Dr. Chong S. Kim (70%) Dr. Timothy M. Gerrity (5%) Ms. Paulette Dewitt (5%)</p> <p>NHEERL Research Triangle Park, NC</p> <p>(Ineligible authors: Dr. Shu-Chieh Hu and Dr. Thomas C. Kang)</p>	LEVEL III	Lung dosimetry of inhaled particles in normals and patients with obstructive airway disease.
HE0029	Prediction of ozone-induced FEV1 changes: effects of concentration, duration and ventilation (American Journal of Respiratory and Critical Care Medicine, 156 (3):715-722, 1997)	<p>Dr. William F. McDonnell (35%) Dr. Elston Seal, Jr. (15%) Dr. Howard R. Kehrl (10%) Mr. Lawrence J. Folinsbee (10%) Dr. Donald H. Horstman (10%)</p> <p>NHEERL Research Triangle Park, NC</p> <p>(Ineligible authors: Dr. Paul W. Stewart, Dr. marjo V. Smith and Dr. Solange Andreoni)</p>	LEVEL III	For mathematical modeling of ozone exposure-response relationships in humans.
HE0062	<p>1. Concentration-time relationships for the effects of inhaled trichloroethylene on signal detection behavior in rats (Fundamental and Applied Toxicology, 36:30-38, 1997)</p> <p>2. The ototoxicity of trichloroethylene: extrapolation and relevance of high-concentration, short duration animal exposure data (Fundamental and Applied Toxicology, 38:101-106, 1997)</p>	<p>Dr. Philip J. Bushnell (50%) Dr. Kevin M. Crofton (45%)</p> <p>NHEERL Research Triangle Park, NC</p> <p>(Ineligible author: Mr. Xiaotong Zhao)</p>	LEVEL III	For research to increase the accuracy of temporal extrapolation in assessing the risk of neurotoxicity from volatile organic compounds.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (SAB Comments in paren.)
HE0106	<p>1. HSP70-2 is part of the synaptonemal complex in mouse and hamster spermatocytes (Chromosoma, 104(6):414-421, 1996)</p> <p>2. Targeted gene disruption of Hsp70-2 results in failed meiosis, germ cell apoptosis, and male infertility (Proceedings of the National Academy of Sciences, USA 93(8):3264-3268, 1996)</p>	<p>Dr. James W. Allen (20%) Dr. David J. Dix (20%) Ms. Barbara W. Collins (20%)</p> <p>NHEERL Research Triangle Park, NC</p> <p>(Ineligible authors: Dr. B.A. Merrick, Dr. C. He, Dr. J.K. Selkirk, Ms. P. Poorman-Allen, Dr. M.E. Dresser, Dr. E.M. Eddy, Dr. C. Mori, Ms. N. Nakamura and Ms. E. H. Goulding)</p>	LEVEL III	Meiotic mechanisms dependent on a unique heat shock protein.
MM0035	Simultaneous determination of ionization constants and isoelectric points of 12 hydroxy-s-triazines by capillary zone electrophoresis and capillary isoelectric focusing (Analytical Chemistry, 69 (13):2559-2566, 1997)	<p>Dr. Arthur W. Garrison (35%)</p> <p>NERL Athens, GA</p> <p>(Ineligible authors: Dr. Philippe Schmitt, Dr. Thomas Poiger and Dr. Rupert Simon)</p>	LEVEL III	For application of new technique to measure parameters that determine the mobilities of ionizable environmental pollutants.
MM0043	Characterizing dissolved oxygen conditions in estuarine environments (Environmental Monitoring and Assessment, 45 :319-328, 1997)	<p>Dr. J. Kevin Summers (75%)</p> <p>NHEERL Gulf Breeze, FL</p> <p>(Ineligible authors: Dr. Stephen B. Weisberg, Ms. Jingyee Kou, Sr. A. Fredrick Holland, Ms. Virginia D. Engle, Dr. Denise L. Breitber, and Dr. Robert J. Diaz)</p>	LEVEL III	For contributions in the area of rigorous field testing, evaluations and characterizations of indicators of dissolved oxygen as a component of ecological condition of estuarine ecosystems.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (SAB Comments in paren.)
MM077	<p>1. Determination of bromate in drinking waters by ion chromatography with inductively coupled plasma mass spectrometric detection (Journal of Chromatography, 753(2):261-267, 1996)</p> <p>2. Determination of bromate in the presence of brominated haloacetic acids by ion chromatography with inductively coupled plasma mass spectrometric detection (Environmental Science and Technology, 31(7):2059-2063, 1997)</p>	<p>Dr. John T. Creed (50%) Ms. Carol Brockhoff (40%)</p> <p>NERL Cincinnati, OH</p> <p>(Ineligible author: Dr. Matthew Magnuson)</p>	LEVEL III	Bromate determination in drinking water in the presence of brominated haloacetic acids by IC-ICP-MS.
MM0095	Ambient air concentrations of fine (PM _{2.5}) manganese in united states national parks and in california and canadian cities: the possible impact of adding MMT to unleaded gasoline (Journal of Air and Waste Management Association, 47 (2):642-652, 1997)	<p>Dr. Lance A. Wallace (50%) Mr. Terrence Slonecker (50%)</p> <p>NERL Research Triangle Park, NC</p>	LEVEL III	For estimating background contributions of soil to airborne fine manganese, in preparation for determining the impact of adding MMT to unleaded gasoline.
RA0005 (Formerly MM0005)	Determination of total organic emissions from hazardous waste combustors (Analytical Chemistry, 68 (1):156-161, 1996)	<p>Dr. Larry D. Johnson (100%)</p> <p>NERL Research Triangle Park, NC</p>	Level III	For contribution to decrease in uncertainties in site specific assessments of hazardous waste combustors through elucidation of the theory of total organic emissions methodology.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (SAB Comments in paren.)
RA0011	Human exposure and body burden for chloroform and other trihalomethanes (Critical Reviews in Environmental Science & Technology, 27 (2):113-194, 1997)	Dr. Lance A. Wallace (100%) NERL Research Triangle Park, NC	LEVEL III	For providing a comprehensive review of human exposure to chloroform through all important pathways.
RA0027	Reactive oxygen species in natural waters (Active Oxygen in Chemistry, 2 (8):280-333, 1995)	Dr. Richard G. Zepp (50%) NERL Athens, GA (Ineligible author: Dr. Neil Blough)	LEVEL III	Reactive oxygen species in natural waters.
RA0042	Scientific basis for the voc reactivity issues raised by section 183(e) of the clean air act amendments of 1990 (Journal of Air and Waste Management Association, 30 (5):1680-1686, 1996)	Dr. Basil Dimitiades (100%) NERL Research Triangle Park, NC	LEVEL III	For selecting, reviewing and analyzing relevant, complex scientific evidence, and interpreting it in terms of scientific bases used by the environmental protection agency to develop law-required consumer and commercial product emission control policies/strategies for ambient ozone reduction.
RM0081	Estimate of methane emissions from the U.S. natural gas industry (Chemosphere, 35 (6):1365-1390, 1997)	Dr. David A. Kirchgessner (80%) NRMRL Research Triangle Park, NC (Ineligible authors: Mr. Robert A. Lott, Mr. R. Michael Cowgill and Mr. Matthew R. Harrison)	LEVEL III	In recognition of contributions to the study of emissions of green house gases.
TF0031	Propagation of uncertainty through geochemical code calculations (Geochimica et Cosmochimica Acta, 60 (19):3551-3568, 1996)	Mr. Gerrard F. Laniak (30%) NERL Athens, GA (Ineligible authors: Dr. L.J. Criscenti and Dr. R.L. Erickson)	LEVEL III	For developing innovative methods for predicting environmental fate with uncertainty analyses.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (<i>SAB Comments in paren.</i>)
TF0034	Factors controlling regioselectivity in the reduction of polynitroaromatics in aqueous solution (Environmental Science and Technology, 30 (10):3028-3038, 1996)	<p>Dr. Eric J. Weber (30%)</p> <p>NERL Athens, GA</p> <p>(Ineligible authors: Ms. Susan E. Barrows, Dr. Christopher J. Cramer, Dr. Donald G. Truhlar and Dr. Michael Elovitz)</p>	LEVEL III	For the use of computational chemistry in predicting the regioselectivity in the reduction of polynitroaromatics.
TF0064	Biogenic isoprene emission: model evaluation in a southeastern united states bottomland deciduous forest (Journal of Geophysical Research, 102 (D15):18,889-18,901, 1997)	<p>Mr. Christopher D. Geron (50%) Mr. Robert R. Arnts (30%) Dr. Joseph E. Sickles II (5%)</p> <p>NRMRL Research Triangle Park, NC</p> <p>(Ineligible authors: Dr. Alex Guenther, Dr. Thomas Sharkey, Eric Singaas, Peter Vanderveer, Dr. Daline Nie and Dr. Tad Kleindienst)</p>	LEVEL III	Biogenic emission inventory system II model validation.
TF0080	<p>1. Risk assessment methodology for karst aquifers: (1) estimating karst conduit-flow parameters (Environmental Monitoring and Assessment, 47(1):1-21, 1997)</p> <p>2. Risk assessment methodology for karst aquifers: (2) solute-transport modeling (Environmental Monitoring and Assessment, 47(1):23-37, 1997)</p>	<p>Dr. Malcolm S. Field (95%)</p> <p>NCEA Washington, D.C.</p> <p>(Ineligible author: Dr. Stephen G. Nash)</p>	LEVEL III	Scientific and technological achievement for pioneering a new risk assessment methodology for contaminated sites in karst terranes.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (SAB Comments in paren.)
Nominations Recommended for Honorable Mention - Total of nineteen				
CS0038	The possible role of indoor radon reduction systems in back-drafting residential combustion appliances (Indoor Air, 7(3):206-214, 1997)	Dr. Bruce Henschel NRMRL Research Triangle Park, NC	HONORABLE MENTION	Analysis explaining when radon reduction systems might cause residential back-drafting, in support of ORIA.
CS0056	Test results for fuel cell operation on landfill gas (Energy-The International Journal, 22(8):777-786, 1997)	Dr. Ronald J. Spiegel NRMRL Research Triangle Park, NC (Ineligible authors: Mr. J. C. Trocciola and Mr. J. L. Preston)	HONORABLE MENTION	In recognition of the development of a fuel cell power generator for landfills.
CS0082	Formation and destruction of hexavalent chromium in a laboratory swirl flame incinerator (Combust. Sci. and Tech., 116-117:479-498, 1996)	Dr. William P. Linak Mr. Jeffery V. Ryan NRMRL Research Triangle Park, NC (Ineligible author: Dr. Jost O. L. Wendt)	HONORABLE MENTION	For research developing a novel control technology for minimizing hexavalent chromium emissions.
EC0002	The effects of elevated metals on benthic community metabolism in a rocky mountain stream (Environmental Pollution, 92(2):183-190, 1997)	Dr. Brian H. Hill Dr. James M. Lazorchak Dr. Frank H. McCormick Mr. W. Thomas Willingham NERL Cincinnati, OH	HONORABLE MENTION	For advances in the application of indicators of ecosystems function in the analysis of disturbances to streams.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (SAB Comments in paren.)
EC0007	<p>Dermal absorption of three waterborne chloroethanes in rainbow trout (<i>Oncorhynchus mykiss</i>) and channel catfish (<i>Ictalurus punctatus</i>) (Fundamental and Applied Toxicology, 31(0094):218-228, 1996)</p> <p>A physiologically base toxicokinetic model for dermal absorption of organic chemicals by fish (Fundamental and Applied Toxicology, 31(0095):229-242, 1996)</p>	<p>Dr. James M. Mckim Dr. John W. Nichols Mr. Gregory J. Lien Mr. Alex D. Hoffman Ms. Gertrude N. Stokes</p> <p>NHEERL Duluth, MN</p> <p>(Ineligible authors: Ms. Sharon L. Bertelsen, Ms. Carol A. Gallinat and Ms. Colleen M. Elonen)</p>	HONORABLE MENTION	An <i>in vivo</i> study of the mechanisms controlling the dermal exchange surface of fish for use in predictive toxicity models.
EC0008	Fate and effects of the herbicide atrazine in flow through wetland mesocosms (Environmental Toxicology and Chemistry, 15 (6):937-946, 1996)	<p>Dr. Naomi Detenbeck Mr. Roger Hermanutz Ms. Kathleen Allen</p> <p>NHEERL Duluth, MN</p> <p>(Ineligible author: Dr. Michael Swift)</p>	HONORABLE MENTION	Evaluation of the interactive effects of an herbicide (atrazine) and primary limiting factors on wetland ecosystems.
EC0012	<p>Effects of light intensity on the phototoxicity of fluoranthene to benthic macroinvertebrate (Environmental Science and Technology, 29(11):2828-2833, 1995)</p> <p>Evaluation of models for predicting the phototoxic potency of polycyclic aromatic hydrocarbons (Aquatic Toxicology, 37(1):37-50, 1997)</p>	<p>Dr. Gerald T. Ankley Dr. Russell J. Erickson Mr. Gary L. Phipps Mr. Vincent R. Mattson Ms. Barbara R. Sheedy Ms. Patricia A. Kosian</p> <p>NHEERL Duluth, MN</p> <p>(Ineligible author: Ms. Julie S. Cox)</p>	HONORABLE MENTION	Models for predicting the phototoxic of polycyclic hydrocarbons.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (<i>SAB Comments in paren.</i>)
EC0091	Spatial uncertainty analysis: propagation of onterpolation errors in spatial distributed models (Ecological Modeling, 91 :21-229, 1996)	Dr. Donald L. Phillips NHEERL Corvallis, OR (Ineligible author: Dr. Danny G. Marks)	HONORABLE MENTION	Spatial uncertainty analysis: propagation of interpolation errors in spatially distributed models.
EC0092 (Combined with EC0094)	1. Allocation of carbon in mycorrhizal <i>Pinus ponderosa</i> seedlings exposed to ozone (New Phytologist, 131 :471-480, 1995) 2. Lifetime and temporal occurrence of ectomycorrhizae on ponderose pine (<i>Pinus ponderosa</i> laws.) Seedlings grown under varied atmospheric CO ₂ and nitrogen levels (Plant and Soil, 189 :275-287, 1997)	Dr. Christian P. Andersen Dr. Paul Rygielwicz NHEERL Corvallis, OR Dr. Paul T. Rygielwicz Dr. David T. Tingey NHEERL Corvallis, OR (Ineligible authors: Dr. Mark G. Johnson, Dr. Lisa M. Ganio and Ms. Majorie J. Storm)	HONORABLE MENTION	For results leading to a better mechanistic understanding of ozone effects on rhizosphere processes. For research leading to a better understanding on mycorrhizae in the cycling of carbon through forested systems.
HE0040	Inflammation and cell damage induced by repeated exposure of humans to ozone (Inhalation Toxicology, 9 :211-235, 1997)	Dr. Robert B. Devlin Dr. Lawrence J. Folinsbee Dr. Gary Hatch Dr. Hillel S. Koren NHEERL Research Triangle Park, NC (Ineligible authors: Dr. Frank Biscardi, Dr. Mark Robbins, Dr. Susanne Becker and Dr. Michael Madden)	HONORABLE MENTION	Health effects of repeated exposure of humans to ozone.

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Nom. #	Titles and Citations of Submitted Papers	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (<i>SAB Comments in paren.</i>)
HE0061	Pesticide applicers, biocides and birth defects in rural Minnesota (Environmental Health Perspectives, 104 (4):394-399, 1996)	Ms. Dina M. Schreinemachers Dr. Jack Griffith NHEERL Research Triangle Park, NC (Ineligible authors: Dr. Vincent F. Gary and Ms. Mary E. Harkins)	HONORABLE MENTION	A significant contribution to the understanding of the potential effects of environmental exposure to pesticides.
HE0070	Selection of models for assessing dose-response relationships for particle-induced lung cancer (Inhalation Toxicology, 8 :159-278, 1996)	Dr. Chao W. Chen NCEA Washington, DC (Ineligible author: Dr. Gunter Oberdörster)	HONORABLE MENTION	The nominees have made a significant and timely contribution to the improvement of EPA risk assessment, by developing an innovative procedure and demonstrating how biological information can be incorporated into dose-response modeling.
HE0086	Characterization of the MDCK cell line for screening neurotoxicants (Neurotoxicology, 17 (2):433-444, 1996) Cell culture models of interspecies selectivity to organophosphorus insecticides (Neurotoxicology, 18 (1):283-298, 1997) Acetylcholinesterase and neuropathy target esterase inhibitions in neuroblastoma cells to distinguish organophosphorus compounds causing acute and delayed neurotoxicity (Fundamental and Applied Toxicology, 38 :55-63, 1997)	Dr. Bellina Veronesi NHEERL Research Triangle Park, NC (Ineligible authors: Dr. Marion Ehrich, Dr. Jan Krzysztof, Dr. Marga Oortgiesen, Dr. Heather Durham, Dr. Marion Ehrich, and Dr. Linda Correll)	HONORABLE MENTION	This award is given in recognition of federally sponsored research that focused on developing and implementing cell culture models to identify and address the mechanism of action of putative neurotoxicants.

* 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	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (SAB Comments in paren.)
HE0097	Nucleoside-mediated mitigation of 5-fluorouracil-induced toxicity in synchronized murine erythroleukemic cells (Toxicology and Applied Pharmacology, 146 :29-39, 1997)	Mr. Kenneth H. Elstein Dr. M. Leonard Mole Dr. Woodrow Setzer Dr. Robert M. Zucker Dr. Robert J. Kavlock Dr. John Rogers Dr. Christopher Lau NHEERL Research Triangle Park, NC	HONORABLE MENTION	A new mechanism for the exogenous mitigation of 5-fluorouracil-induced toxicity.
HE0101	<p>Carbendazim (mbc) disrupts oocyte spindle function and induces aneuploidy in hamsters exposed during fertilization (meiosis II) (Molecular Reproduction and Development, 42:200-209, 1995)</p> <p>Acute exposure of female hamsters to carbendazim (mbc) during meiosis results in aneuploid oocytes with subsequent arrest of embryonic cleavage and implantation (Reproductive Toxicology, 10(3):183-189, 1996)</p> <p>Use of fungicide carbendazim as a model compound to determine the impact of acute chemical exposure during oocyte maturation and fertilization on pregnancy outcome in the hamster (Toxicology and Applied Pharmacology, 114:225-231, 1992)</p>	Dr. Sally D. Perreault Ms. Susan C. Jeffay Mr. Randy R. Barbee NHEERL Research Triangle Park, NC (Ineligible authors: Dr. Kurt Zuelke and Dr. Bisharah Libbus)	HONORABLE MENTION	Mechanisms of oocyte and zygote toxicity produced by acute exposure to a model fungicide: Implications for female reproductive risk assessment.

* 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	Authors* and Nominating Organization	Recommended Award Level	Suggested Citation from Nominating Organization (<i>SAB Comments in paren.</i>)
MM0018	Normalization of metal concentrations in estuarine sediments from the gulf of Mexico (<i>Estuaries</i> , 19 (3):581-594, 1996)	Dr. J. Kevin Summers NHEERL Gulfbreeze, FL (Ineligible authors: Dr. Terry L. Wade and Ms. Virginia D. Engle)	HONORABLE MENTION	For contributions in the area of development of field analytical and statistical approaches for the assessment of estuarine ecosystem condition.
MM0057	Multi-layer sampling in conventional monitoring wells for improved estimation of vertical contaminant distributions and mass (<i>Journal of Contaminant Hydrology</i> , 25 :85-111, 1997)	Dr. Robert Puls Ms. Cynthia J. Paul NRMRL Ada, OK	HONORABLE MENTION	Improved methods for high resolution discrete interval chemical monitoring in water and watersheds.
RA0025	Predicting environmental fate parameters with infrared spectroscopy (<i>Trend in Analytical Chemistry</i> 16 (1):24-37, 1997)	Dr. Timothy W. Collette NERL Athens, GA	HONORABLE MENTION	For developing an innovative method for predicting environmental fate with spectroscopy.
TF0049	Off-target deposition of pesticides from agricultural aerial spray applications (<i>Journal of Environmental Quality</i> , 25 (5):1095-1104, 1996)	Ms. Sandra L. Bird NERL Athens, GA (Ineligible authors: Mr. David M. Esterly)	HONORABLE MENTION	Analysis of off-target deposition of pesticides from agricultural aerial spray applications.

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