



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

OFFICE OF THE ADMINISTRATOR
SCIENCE ADVISORY BOARD

January 26, 2005

EPA-SAB-05-005

The Honorable Stephen L. Johnson
Acting Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, NW
Washington, DC 20460

**Subject: SAB Report of FY2004 Recommended Scientific and Technological
Achievement Awards (STAA).**

Dear Acting Administrator Johnson:

We are pleased to recommend this year's awardees for The Scientific and Technological Achievement (see attached report). The STAA are the Agency's most prestigious awards for scientific excellence and, as such, they are a formal acknowledgement of the importance of high quality science to the Agency. In light of the emphasis that has been placed on the need for sound science to support Agency decision-making, the STAA program is of critical importance. The SAB considers the STAA one of its most significant responsibilities.

The SAB Panel reviewed a slate of 146 nominations. Of these, six (4%) were recommended for the highest level I award. Another 13 (9%) and 32 (22%) nominations have been recommended for level II and III awards, respectively. The numbers of nominations and awards continue an impressive trend of increasing quantity and quality of published research within the Agency.

We believe that a strong and viable STAA program is critical to maintaining this outstanding success. To that end, in recognizing next year as the 25th anniversary of the STAA program, we recommend that the Agency use this occasion to recognize and promote scientific and technological excellence within the Agency. The SAB STAA Review Panel would be happy to assist and the attached report makes some recommendations about how to celebrate the success of this program.

Thank you for providing us with the opportunity to assist the Agency with this important program. We look forward to working with you in 2005 to mark the 25th anniversary!

Sincerely,

/signed/

Dr. Granger Morgan, Chair
EPA Science Advisory Board

/signed/

Dr. Deborah Cory-Slechta, Chair
Scientific and Technological Achievement
Awards Panel (FY2003-2005)
EPA Science Advisory Board

NOTICE

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

ABSTRACT

This report represents the conclusions and recommendations of the U.S. Environmental Protection Agency's Science Advisory Board regarding the FY2004 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 146 nominations in ten categories this year. The categories are: Control Systems & Technology (CS), Ecological Research (ER), Environmental Statistics (ES), Health Effects, Health Risk Assessment (HE), Integrated Risk Assessment (IR), Monitoring & Measurement Methods (MM), Review Articles (RA), Risk Management and Ecosystem Restoration (RM), Social Sciences (SS), and Transport and Fate (TF). No nominations were transmitted in the category of Environmental Futures (EF). Of these, the Panel recommended 51 nominations (35 percent of the nominations) for awards, and also identified an additional 37 nominations worthy of Honorable Mention. The authors of papers recommended for awards this year represent the Office of Prevention, Pesticides and Toxic Substances, Region 6, and 15 research facilities and centers within the Office of Research and Development.

The Panel 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 Panel also strongly encouraged that EPA broadly acknowledge and disseminate the results of the award competition.

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

**U.S. Environmental Protection Agency
Science Advisory Board
Scientific and Technological Achievement Awards Review Panel
FY2003-2005***

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* Members of this SAB Panel consist of:

- a. SAB Members: Experts appointed by the Administrator to serve on one of the SAB Standing Committees.
- b. SAB Consultants: Experts appointed by the SAB Staff Director to serve on *ad hoc* Panels formed to address a particular issue.

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1. EXECUTIVE SUMMARY

At a closed meeting August 10-12, 2004, the Scientific and Technological Achievement Awards (STAA) Panel of the EPA Science Advisory Board (SAB) reviewed and evaluated the 146 nominations for the FY2004 program and recommended 51 for awards and an additional 37 nominations for honorable mention. These recommendations appear in Appendix A.

The STAA program is a long-standing partnership between the Agency and the EPA Science Advisory Board. Scientists and engineers throughout the Agency can request that their peer-reviewed published papers be nominated for awards. ORD manages the overall program and submits the papers to the SAB for evaluation. The SAB convenes an experienced interdisciplinary group of scientists and engineers to evaluate the nominations. The SAB review panel produces a set of award recommendations which ORD uses to prepare the actual awards.

Recognition of the authors of the award-winning papers helps establish publication in peer reviewed journals as normative. In 2003 and 2004, the Agency honored those EPA authors receiving the highest level of awards at the annual Science Forum. While recognizing that there are limitations on what the Agency can do for those scientists and engineers who are not employees, the Panel would also like to see some form of recognition for the non-EPA co-authors of papers receiving awards, even if it is only a letter informing them that a paper to which they contributed had received an Agency award for its quality.

Publicity about the STAA program encourages employees to participate, adds luster to the awards, and makes the general public more aware of the quality and depth of EPA science. Making the public aware of the quality of EPA science and its publication in the peer reviewed literature improves the credibility of the science underpinning Agency decisions on important scientific issues of specific importance to EPA.

The STAA program began in 1980 and is approaching its silver anniversary. The need to recognize, promote, and reward the publication of science in peer-reviewed journals has become increasingly important. The Panel requests the opportunity to work with the Agency to gather information about the history of the program, reflect upon its strengths and weaknesses, consider its future and plan celebrations of its achievements at the quarter-century mark.

2. PROCEDURE

In 2003, the EPA Science Advisory Board convened a Panel to review and evaluate scientific and technological papers published in peer-reviewed journals by EPA authors and nominated for the FY2003-2005 Scientific and Technological Achievement Awards (STAA) program. The panel was formed in accordance with the principles set out in the 2002 commentary of the Science Advisory Board, *Panel Formation Process: Immediate Steps to Improve Policies and Procedures* (EPA-SAB-EC-COM-02-003). Most panelists are current or

former members of the Board and all have extensive experience with the Agency gained on SAB reviews. While the original intention was that this Panel would serve unchanged for three years, the loss of a member in early 2004 led to a second, more limited widecast and the appointment of a new member to this Panel. The Panel roster is included above.

In 2004, the Office of Research and Development (ORD) provided copies of 146 nominations. ORD grouped the papers into eleven categories of science and technology¹, and screened the papers for conformance with the nomination guidelines. The Panel used the 2004 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. ORD requested the SAB consider the nominations to determine whether they qualified 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. The nomination should recognize the creation or general revision of scientific or technological principle or procedure, or a highly significant improvement in the value of a device, activity, program, or service to the public. It must be at least of national significance or have high impact on a broad area of science/technology. The nomination must be of far reaching consequences and recognizable as a major scientific/technological achievement within its discipline or field of study.
- 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 field of study.
- 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. It must relate to a mission or organizational component of the EPA, or significantly affect a relevant area of science/technology.
- d) Honorable Mention - The Panel 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

¹ The Agency submitted 146 nominations in ten categories for review this year. The categories are: Control Systems & Technology (CS), Ecological Research (ER), Environmental Statistics (ES), Health Effects, Health Risk Assessment (HE), Integrated Risk Assessment (IR), Monitoring & Measurement Methods (MM), Review Articles (RA), Risk Management and Ecosystem Restoration (RM), Social Sciences (SS), Transport and Fate (TF). No nominations were transmitted for the category of Environmental Futures (EF).

that the Panel wants to encourage; or (3) show an area of research that the Panels feels is too preliminary to warrant an award recommendation at this time.

Copies of all nominations/papers and the award program guidelines and nomination evaluation criteria were provided to the Panel in advance of the review meeting. Two or more panelists reviewed each nomination independently.

The Panel met on August 10-12, 2004, in Washington, DC. This was a closed session because issues concerning personal privacy and potential cash awards were discussed. All panelists were present at the meeting. Each panelist was asked to review a set of papers suited to his or her expertise. Before the meeting, the panelists provided their individual initial ratings of the papers and ranked their own expertise in the field relative to each nomination they selected for review.

The Panel discussed the individual rankings and nominations to develop preliminary consensus ratings for each nomination. The Panel as a whole first discussed rankings on a nomination-by-nomination basis. There was less discussion of those nominations where readers independently had reached the same conclusion about the appropriate ranking than on those where panelists had independently recommended different rankings.

After the panelists had agreed to consensus ratings for each nomination, the Panel then considered whether the papers were correctly rated in comparison with one another. The Panel compared various rankings and made adjustments, where warranted, until the panelists were comfortable that the nominations were rated consistently in relationship to one another. Papers being recommended for awards received particular attention. Nominations that were not initially recommended for an award were also reconsidered to determine if the nomination might merit either an Honorable Mention or an award.

The final ranking agreed to at that meeting is a consensus ranking. All nominations receiving a recommendation for a Level I, II or III award or an Honorable Mention are listed in Appendix A.

When the Board considered the Panel's report for approval prior to transmittal to the Agency, it reviewed the Panel report, less the actual award recommendations (Appendix A). The actual awards identified in Appendix A were not made available until the Agency had the opportunity to make the awards.

3. GENERAL FINDINGS AND RECOMMENDATIONS

3.1. Award Recommendations

While slightly fewer awards were recommended this year than last, the nominations were quite strong. Table I summarizes the Level I and Level II awards by year since 1996.

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

Award Level	FY1996	FY1997	FY1998	FY1999	FY2000	FY2001	FY2003*	FY2004
Level I	4	3	1	0	2	4	7	6
Level II	16	11	7	5	11	7	18	13
Total Level I & II	20	14	8	5	13	11	25	19

*The apparent lack of FY2002 reflects a change in naming conventions, not a skipped year. Starting in FY2003 the review was identified by the year of the review.

Table II summarizes the distribution of award recommendations among categories. Of 146 nominations, the Panel recommended 87 for an award (51) or honorable mention (37).

TABLE II - Summary of FY2004 Award Recommendations

Nomination Categories	Total Nom.	Award Levels				Award %	Hon. Men.
		I	II	III	Tot		
Control Systems & Technology (CS)	10	0	1	2	3	30	3
Ecological Research (ER)	32	1	3	7	11	34	8*
Environmental Statistics (ES)	4	0	0	1	1	25	1
Health Effects, Health Risk Assessment (HE)	25	2	5	7*	14	56	3
Integrated Risk Assessment (IR)	7	0	0	2	2	28	2
Monitoring & Measurement Methods (MM)	25	0	1	5	6	24	5
Review Articles (RA)	16	2	1	3	6	38	4
Risk Management and Ecosystem Restoration (RM)	6	0	0	2*	2	33	1
Social Sciences (SS)	3	0	0	1	1	33	0
Transport and Fate (TF)	18	1	2	2	5	28	10
Environmental Futures (EF)	0	0	0	0	0	0	0
TOTALS:	146	6	13	32	51	35	37

*Includes recognition of some combined nominations

The full list of award recommendations is contained in Appendix A.

3.2. Administrative Recommendations

ORD continues to do a good job administering the STAA program.

The Panel has four recommendations regarding the nomination process.

1. The Panel was pleased to see papers from non-traditional sources, such as the regional and program offices. There continue to be very few nominations from the regional or program offices, even offices where staff are known to be publishing in the peer reviewed literature. Therefore, the Panel recommends that ORD conduct active outreach inviting participation of scientists and engineers from across the Agency.
2. Many nominations were authored by researchers from multiple institutions. It is difficult to fairly sort out the relative contributions to the scientific achievement and the Panel does not wish to second guess the nominators. However, the authors are in the best position to understand the contributions. Therefore, the Panel asks the Agency to provide a record of agreement among the co-authors that credit has been correctly assigned. The Panel would not need to see signatures; an email from each author agreeing to the assignment would suffice. There would be no need of such documentation, of course, for single authored papers, papers where the authors share equally in the credit, or from an author who was deceased
3. The Panel asks that future nominations be written to help the Panel understand the relationship of a nomination to previous nominations with similar subjects and authors. A few sentences or a paragraph would be adequate.
4. Overall, the quality of the nominations submitted to the Panel this year was very high. The Panel asks that ORD remain selective about the papers nominated and send no more than 150 nominations per cycle.
5. The Panel asks that ORD send no more than three papers per nomination.
6. Nominations that are photocopied should be photocopied carefully and checked for readability.

The Panel has two recommendations regarding the post-award process.

1. The Panel 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.
2. While the Panel understands that the Agency cannot give monetary awards to non-EPA authors, surely the Agency can at least recognize non-EPA authors with

a letter informing them that the paper they contributed to has received a STAA award. Anecdotal evidence indicates that at least some non-EPA authors of award winning papers have not been notified that the paper to which they contributed had been judged worthy of a STAA award.

3.3. Program Recommendations

The STAA program began in 1980 and is approaching its 25th year of operation. The program remains an important mechanism for recognizing and promoting high quality, peer-reviewed research published in top scientific and technological journals.

The Panel has four recommendations regarding the program as it approaches the 25 year mark.

1. The STAA program should be continued.

The need for Agency scientists and engineers to publish in the peer reviewed literature is even more important now that the Office of Management and Budget has issued government-wide guidelines for ensuring and maximizing the quality, objectivity, utility, and integrity of information disseminated by Federal agencies. These guidelines contain a presumption favoring peer-reviewed information and explicitly identify the review process used by scientific journals as an example of acceptable formal, independent, external peer review.

2. There should be some retrospective analysis of the STAA program and a corresponding celebration of its achievements.
3. Thought should be given to creating an even better future for the STAA program. For example, other models of awards programs could be considered with different structures of awards and other criteria.
4. It might also be possible to develop software which would reduce the administrative work involved in managing the program (developing the nomination packages, documenting the review of the nominations, and documenting the awards).

Appendix A - Nominations Recommended for Awards

FY2004 Scientific and Technological Achievement Awards (STAA)			
Nominations Recommended for Awards			
Nominations Recommended for a Level I Award (\$5000) -- Total of Six			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4ER 0034	a) Isolated Wetlands and Their Functions: An Ecological Perspective. <i>Wetlands, 23(3):517-531 (2003)</i> b) Isolated Wetlands: State-of-the-Science and Future Directions. <i>Wetlands, 23(3):663-684 (2003)</i>	Dr. Scott G. Leibowitz (70%) Dr. Tracie-Lynn Nadeau (30%) NHEERL, Corvallis, OR	Advancing the Scientific Understanding of Isolated Wetlands Following the U.S. Supreme Court's SWANCC Decision
S4HE 0060	Methylated Trivalent Arsenicals as Candidate Ultimate Genotoxic Forms of Arsenic: Induction of Chromosomal Mutations but not Gene Mutations. <i>Environmental and Molecular Mutagenesis, 42(3):192-205 (2003)</i>	Dr. David M. DeMarini (10%) Dr. Andrew D. Kligerman (10%) Dr. Carolyn L. Doerr (10%) Dr. Alan H. Tennant (5%) Dr. Karen Harrington-Brock (10%) Dr. James W. Allen (5%) Dr. Ernest Winkfield (10%) Dr. Barbara C. Roop (5%) Dr. Marc J. Mass (5%) NHEERL, Research Triangle Park, NC	Identifying the Ultimate Genotoxic Forms of Arsenic and the Class of Mutations They Induce
S4HE 0062	Blood Lead Concentration and Delayed Puberty in Girls. <i>New England Journal of Medicine, 348(16):1527-1536 (2003)</i>	Dr. Sherry G. Selevan (22%) Dr. Deborah C. Rice (17%) Dr. Karen A. Hogan (17%) Dr. Susan Y. Euling (17%) Dr. Andrea Pfahles-Hutchens (17%) NCEA, Washington, DC	Outstanding Research on Association of Blood Lead Concentration with Pubertal Timing in Girls from NHANES III (1988-1994)
* Note: The percentages given after name represent the current percent of the total level of effort as documented in the EPA nomination.			

Nominations Recommended for a Level I Award (\$5000) -- Total of Six (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4R A0119	Health Effects of 'Acanthamoeba' spp. and Its Potential for Waterborne Transmission. <i>Reviews of Environmental Contamination and Toxicology (Springer-Verlag, New York), 180:93-131 (2004)</i>	Dr. Nena Nwachuku (80%) OST, Washington, DC	Outstanding Contribution to Public Health Protection in Identifying the Critical Control Point for 'Acanthamoeba' Eye Infection in Contact Lens Wearers
S4RA 0142	Source-Sink Balance and Carbon Allocation Below Ground in Plants Exposed to Ozone. <i>New Phytologist, 157:213-228 (2003)</i>	Dr. Christian P. Andersen (100%) NHEERL, Corvallis, OR	Contributions to Our Understanding of the Effects of Ozone on Below-Ground Ecosystems
S4TF 0096	Toxicity Characteristic Leaching Procedure and Iron Treatment of Brass Foundry Waste. <i>Environmental Science and Technology, 37(2):367-371 (2003)</i>	Dr. Douglas S. Kendall (100%) NEIC, Denver, CO	Providing a Sound Scientific Foundation for a New Regulation and for Demonstrating Limitations of Leaching Tests

Nominations Recommended for a Level II Award (\$2500) -- Total of Thirteen			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4CS 0004	Four-Flow Path High-Efficiency NO _x and PM Exhaust Emission Control System for Heavy-Duty On-Highway Diesel Engines. <i>Society of Automotive Engineers Technical Paper Series, (2003-01-2305):1-15 (2003)</i>	Dr. Charles R. Schenk (33%) Dr. Christopher A. Laroo (33%) Dr. Brian A. Olson (33%) NVFEL, Ann Arbor, MI	Exceptional Technical Achievement in Optimizing an Emission-Reduction Catalyst System for Heavy-Duty Diesel Engines
S4ER 0018	Effect of Eelgrass 'Zostera marina' Canopies on Flow and Transport. <i>Marine Ecology Progress Series, 248:67-83 (2003)</i>	Dr. Mohamed A. Abdelrhham (100%) NHEERL, Narragansett, RI	Defining Flow Patterns and Transport of Nutrients and Contaminants in the Vicinity of Submerged Aquatic Vegetation
S4ER 0029	Nitrogen Export from Forested Watersheds in the Oregon Coast Range: The Role of N ₂ -Fixing Red Alder. <i>Ecosystems, 6:773-785 (2003)</i>	Dr. Jana E. Compton (45%) Dr. M. Robbins Church (25%) Dr. Scott T. Larned (20%) Dr. William E. Hogsett (10%) NHEERL, Corvallis, OR	Outstanding Contributions to the Understanding of Natural Controls on Nitrogen Concentrations in Streams and Rivers of the Oregon Coast Range
S4ER 0033	Coastal Ecological Data from the Virginian Biogeographic Province, 1990-1993. <i>Ecology (and Ecological Archives, on Line), 83(10):2942 1-25 (2002)</i>	Dr. Stephen S. Hale (60%) Dr. Charles J. Strobel (10%) Dr. John F. Paul (10%) NHEERL, Narragansett, RI	Leading the Online Sharing of Environmental Datasets Useful in Addressing Broad Scale and Long-Term Questions

Nominations Recommended for a Level II Award (\$2500) -- Total of Thirteen (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4HE 0046	<p>a) Exposure to Particulate Matter, Volatile Organic Compounds, and Other Air Pollutants Inside Patrol Cars.</p> <p><i>Environmental Science and Technology, 37:2084-2093 (2003)</i></p> <p>b) Particulate Matter Exposure in Cars is Associated with Cardiovascular Effects in Healthy, Young Men.</p> <p><i>American Journal of Respiratory and Critical Care Medicine, (In Press): (2004)</i></p>	<p>Dr. Robert Devlin (25%) Dr. Ronald Williams (20%) Dr. Lucas Neas (5%)</p> <p>NHEERL, Research Triangle Park, NC</p>	<p>Demonstrating that Particulate Matter Derived from Mobile Sources Alters Cardiovascular Function in Healthy Young Men</p>
S4HE 0051	<p>a) Localization of the Sperm Protein SP22 and Inhibition of Fertility in Vivo and In Vitro.</p> <p><i>Journal of Andrology, 23(1):48-63 (2002)</i></p> <p>b) Bromochloroacetic Acid Exerts Qualitative Effects on Rat Sperm: Implications for a Novel Biomarker.</p> <p><i>Toxicological Sciences, 68:164-173 (2002)</i></p>	<p>Dr. Gary R. Klinefelter (35%) Dr. Juan D. Suarez (10%) Dr. Naomi L. Roberts (10%) Dr. Jeffrey Welch (10%) Dr. Kathy Bobseine (5%) Dr. Susan Jeffay (5%) Dr. Sally D. Perreault (5%) Dr. Lillian Strader (5%) Dr. Randy Barbee (5%) Dr. Robert Zucker (5%)</p> <p>NHEERL, Research Triangle Park, NC</p>	<p>Validation of a Sperm Biomarker for Fertility Assessments</p>
S4HE 0056	<p>Inhaled Environmental Combustion Particles Cause Myocardial Injury in the Wistar Kyoto Rat.</p> <p><i>Toxicological Sciences, 71(2):237-245 (2003)</i></p>	<p>Dr. Urmila P. Kodavanti (30%) Dr. Allen D. Ledbetter (20%) Dr. Mette C. Schladweiler (10%) Dr. Daniel L. Costa (10%)</p> <p>NHEERL, Research Triangle Park, NC, NC</p>	<p>The First Demonstration of Cardiac Injury in Rats from Episodic, Long-Term Exposure to Ambient-Like Particulate Matter</p>

Nominations Recommended for a Level II Award (\$2500) -- Total of Thirteen (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4HE 0061	<p>a) Toxicological Effects of Fine Particulate Matter Derived from the Destruction of the World Trade Center.</p> <p><i>EPA Report, EPA/600/R-02/028, Cincinnati, OH, 53 pages, Dec. 2002</i></p> <p>b) World Trade Center Fine Particulate Matter-Chemistry and Toxic Respiratory Effects: An Overview.</p> <p><i>Environ. Health Perspect., 111(7):972-980 (2003)</i></p> <p>c) World Trade Center Fine Particulate Matter Causes Respiratory Tract Hyperresponsiveness in Mice.</p> <p><i>Environ. Health Perspect., 111(7):981-991 (2003)</i></p>	<p>Dr. Stephen H. Gavett (30%) Dr. Najwa Haykal-Coates (14%) Dr. John K. McGee (13%) Dr. Jerry W. Highfill (8%) Dr. Allen D. Ledbetter (7%) Dr. Daniel L. Costa (5%) Dr. Shirley J. Wasson (4%) Dr. Teri L. Conner (3%) Dr. Thomas J. Hughes (3%)</p> <p>NHEERL, Research Triangle Park, NC</p>	<p>Providing a Comprehensive Chemical and Toxicological Assessment of Fine PM from World Trade Center Dust</p>
S4HE 0144	<p>a) Dose-Based Duration Adjustments for the Effects of Inhaled Trichloroethylene on Rat Visual Function.</p> <p><i>Fundamental and Applied Toxicology, 76:121-130 (2003)</i></p> <p>b) Exact Mass Measurements for Confirmation of Pesticides and Herbicides Determined by Liquid Chromatography/Time-of-Flight Mass Spectrometry.</p> <p><i>Analytical Chemistry, 73(22):5436-5440 (2001)</i></p>	<p>Dr. William K. Boyes (10%) Dr. Mark Bercegeay (10%) Dr. Joseph S. Ali (4%) Dr. Todd Kranz (10%) Dr. John McGee (10%) Dr. Marina Evans (10%) Dr. Philip J. Bushnell (10%) Dr. Jane Ellen Simmons (10%) Dr. Anthony McDonald (10%) Dr. Yusupha Sey (10%)</p> <p>NHEERL, Research Triangle Park, NC</p>	<p>Work Leading to the Development of Dose-Based Duration Adjustments for the Acute Neurotoxic Effects of Exposure to Trichloroethylene</p>

Nominations Recommended for a Level II Award (\$2500) -- Total of Thirteen (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4MM 0072	<p>a) Determination of Carbamate, Urea, and Thiourea Pesticides and Herbicides in Water.</p> <p><i>Analytical Chemistry</i>, 73(5):997-1006 (2001)</p> <p>b) Exact Mass Measurements for Confirmation of Pesticides and Herbicides Determined by Liquid Chromatography/Time-of-Flight Mass Spectrometry.</p> <p><i>Analytical Chemistry</i>, 73(22):5436-5440 (2001)</p>	<p>Dr. William L. Budde (65%)</p> <p>NERL, Cincinnati, OH</p>	<p>Research Demonstrating EPA Leadership in Developing More Accurate and Precise, Faster, and Less Expensive Analytical Methods for Regulated and Unregulated Pesticides and Herbicides in Water</p>
S4RA 0107	<p>a) Water Analysis: Emerging Contaminants and Current Issues.</p> <p><i>Analytical Chemistry</i>, 75(12):2831-2857 (2003)</p> <p>b) Disinfection By-Products and Other Emerging Contaminants in Drinking Water.</p> <p><i>Trends in Analytical Chemistry</i>, 22(10):666-684 (2003)</p>	<p>Dr. Susan D. Richardson (100%)</p> <p>NERL, Athens, GA</p>	<p>State-of-Science Review of Emerging Contaminants and New Issues in Water</p>
S4TF 0091	<p>Changes in Enantiomeric Fractions during Microbial Reductive Dechlorination of PCB132, PCB149, and Aroclor 1254 in Lake Hartwell Sediment Microcosms.</p> <p><i>Environmental Science & Technology</i>, 37(6):1100-1107 (2003)</p>	<p>Dr. W. Jack Jones (35%) Dr. Arthur W. Garrison (25%)</p> <p>NERL, Athens, GA</p>	<p>Providing the First Evidence of Microbial Stereoselective Reductive Dehalogenation of PCBs</p>
S4TF 0092	<p>Accumulation of Perchlorate in Tobacco Plants: Development of a Plant Kinetic Model.</p> <p><i>Environmental Monitoring</i>, 5:505-512 (2003)</p>	<p>Dr. J. Jackson Ellington (60%)</p> <p>NERL, Athens, GA</p>	<p>Developing the First Mathematical Model for the Distribution of Inorganic Environmental Contaminants in Plants</p>

Nominations Recommended for a Level III Award (\$1000) -- Total of Thirty Two			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4CS 0002	<i>Variables Affecting Emissions of PCDD/Fs from Uncontrolled Combustion of Household Waste in Barrels.</i> <i>Journal of Air & Waste Management Association, 53:523-531 (2003)</i>	Dr. Paul M. Lemieux (40%) Dr. Brian Gullett (30%) Dr. Dwain Winters (10%) NRMRL, Research Triangle Park, NC	Performing Research to Estimate the Emissions of Dioxins from Uncontrolled Combustion of Household Waste in Barrels
S4CS 0007	Non-Polluting Metal Surface Finishing Pretreatment and Pretreatment/Conversion Coating. <i>Plating and Surface Finishing, 90(4):66-75 (2003)</i>	Dr. David Ferguson (65%) NRMRL, Cincinnati, OH	Developing a Non-Polluting Pretreatment/Conversion Coating Process for the Metal Finishing Industries
S4ER 0012	SAGE Analysis of Transcriptome Responses in Arabidopsis Exposed to 2,4,6-Trinitrotoluene. <i>Plant Physiology, 133:1397-1406 (2003)</i>	Dr. Nelson L. Wolfe (60%) NERL, Athens, GA	Research Conducted to Enhance the Effectiveness of Phytoremediation Strategies for Explosives
S4ER 0022	Effects of Light Reduction on Growth of the Submerged Macrophyte 'Vallisneria americana' and the Community of Root-Associated Heterotrophic Bacteria. <i>Journal of Experimental Marine Biology and Ecology, 291:199-218 (2003)</i>	Dr. Janis C. Kurtz (25%) Dr. Diane F. Yates (25%) Dr. John M. Macauley (5%) Dr. Robert L. Quarles (10%) Dr. Fred J. Genthner (5%) Dr. Cynthia A. Chancy (5%) Dr. Richard Devereux (25%) NHEERL, Gulf Breeze, FL	Conducting Investigations to Increase Our Understanding of Seagrass Ecology and the Environmental Interactions that May Lead to SAV Loss
S4ER 0023	Bacterioplankton Dynamics in a Subtropical Estuary: Evidence for Substrate Limitation. <i>Aquatic Microbial Ecology, 32:239-250 (2003)</i>	Dr. Michael C. Murrell (100%) NHEERL, Gulf Breeze, FL	Advancing the Understanding of Critical Microbial Processes in Estuaries Subject to Eutrophication

Nominations Recommended for a Level III Award (\$1000) -- Total of Thirty Two (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4E R0030	Relationship Between Reproductive Success and Male Plasma Vitellogenin Concentrations in Cunner, 'Tautogolabrus adspersus'. <i>Environmental Health Perspectives, 111(1):93-99 (2003)</i>	Dr. Lesley J. Mills (40%) Dr. Ruth E. Gutjahr-Gobell (25%) Dr. Gerald E. Zarogian (15%) Dr. Doranne Borsay Horowitz (10%) NHEERL, Narragansett, RI	A Significant Contribution to Research Investigating the Effects of Endocrine-Disrupting Chemicals on Fish Reproduction
S4ER 0032	Biological Response to Variation of Acid-Volatile Sulfides and Metals in Field-Exposed Spiked Sediments. <i>Environmental Toxicology and Chemistry, 20(2): 264-272 (2001)</i>	Dr. Warren S. Boothman (30%) Dr. David J. Hansen (20%) Dr. Walter J. Berry (20%) NHEERL, Narragansett, RI	Aiding Development of Sediment Guidelines by Demonstrating Spatial Factors Affecting Bioresponse to Sediment Metals
S4ER 0036	Marine Bottom Communities of Block Island Waters. <i>The Ecology of Block Island, Proceedings of the Rhode Island Natural History Survey Conference, October 28, 2000, :131-149 (2002)</i>	Dr. Stephen S. Hale (100%) NHEERL, Narragansett, RI	Reviewing the State of Knowledge About the Marine Ecology of Block Island's Great Salt Pond
S4ER 0038	a) Comparing the Effects of Stage and Duration of Retinoic Acid Exposure on Amphibian Limb Development: Chronic Exposure Results in Mortality, Not Limb Malformations. <i>Toxicological Sciences, 74(1):139-146 (2003)</i> b) Developmental Toxicity of Methoprene and Several Degradation Products in 'Xenopus laevis'. <i>Aquatic Toxicology, 64(1):97-105 (2003)</i>	Dr. Sigmund J. Degitz, Jr. (25%) Dr. Gary W. Holcombe (20%) Dr. Patricia A. Kosian (20%) Dr. Elizabeth J. Durhan (15%) Dr. Joseph E. Tietge (10%) Dr. Gerald T. Ankley (10%) NHEERL, Duluth, MN	Studies Characterizing the Developmental Toxicity of Retinoids and Retinoid-Like Compounds in Amphibians

Nominations Recommended for a Level III Award (\$1000) -- Total of Thirty Two (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4ES 0140	Procedures for Calculating Cessation Lag. <i>Regulatory Toxicology and Pharmacology, 38(03):157-165 (2003)</i>	Dr. Chao W. Chen (90%) NCEA, Washington, DC	A Significant Contribution to Risk Assessment Methods that Provides a Foundation for Addressing the Cessation Lag Effect which is Essential for Economic Benefit Analysis
S4HE 0044	Effects of Arsenic on Telomerase and Telomeres in Relation to Cell Proliferation and Apoptosis in Human Keratinocytes and Leukemia Cells in Vitro. <i>Carcinogenesis, 24(11):1811-1817 (2003)</i>	Dr. Judy Mumford (45%) Dr. Michael T. Schmitt (15%) NHEERL, Research Triangle Park, NC	Novel Findings on Health Effects of Arsenic via Alterations to Telomeres and Telomerase in Human Cells
S4HE 0047	a) Formation of 8-oxo-dG in Rat Lung DNA Following Subchronic Inhalation of Carbon Black. <i>Toxicology and Applied Pharmacology, 1 (19(3):224-31 (2003)</i> b) Air Pollution Mediated Oxidative DNA Damage in Cell Free Systems and Human Airway Epithelial Cells in Relation to Particle Metal Content and Bioreactivity. <i>Chemical Research and Toxicology, 14(7):879-887 (2001)</i>	Dr. Jane E. Gallagher (35%) Dr. Reeder Sams (15%) Dr. Lisa Dailey (5%) Dr. Jeff Inmon (5%) Dr. Mike Madden (5%) Dr. Andrew Ghio (5%) NHEERL, Research Triangle Park, NC	Contributions Leading to a Better Understanding of PM Health Effects Using Animal and Complementary in Vitro Human-Cell Test Systems

Nominations Recommended for a Level III Award (\$1000) -- Total of Thirty Two (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4HE 0048	<p>a) Persistent Abnormalities in the Rat Mammary Gland Following Gestational and Lactational Exposure to 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD).</p> <p><i>Toxicological Sciences, 67(1):63-74 (2002)</i></p> <p>b) Cancer and Developmental Exposure to Endocrine Disruptors.</p> <p><i>Environmental Health Perspectives, 111(4):389-394 (2003)</i></p> <p>c) A Novel Effect of Dioxin: Exposure During Pregnancy Severely Impairs Mammary Gland Differentiation.</p> <p><i>Toxicological Sciences, 67(1): 63-74 (2002)</i></p>	<p>Dr. Suzanne E. Fenton (55%) Dr. Linda S. Birnbaum (25%) Dr. Geri L. Youngblood (5%)</p> <p>NHEERL, Research Triangle Park, NC</p>	<p>Demonstrating the Adverse Effects of Prenatal Dioxin Exposure on the Developing Mammary Gland of the Female Rodent</p>
S4HE 0049	<p>a) Dermal, Oral, and Inhalation Pharmacokinetics of Methyl Tertiary Butyl Ether (MTBE) in Human Volunteers.</p> <p><i>Toxicological Sciences, 77(2):195-205 (2004)</i></p> <p>b) The Development and Testing of a Dermal Exposure System for Pharmacokinetic Studies of Administered and Ambient Water Contaminants: Methods and Results.</p> <p><i>Journal of Pharmacological and Toxicological Methods, 47(3):189-195 (2002)</i></p>	<p>Dr. James Prah (50%) Dr. Martin Case (20%) Dr. Joachim Pleil (5%) Dr. Teresa Leavens (5%)</p> <p>NHEERL, Research Triangle Park, NC</p>	<p>A Human Volunteer Study Describing the Pharmacokinetics of MTBE by Three Important Routes of Exposure: Oral, Dermal, and Inhalation</p>

Nominations Recommended for a Level III Award (\$1000) -- Total of Thirty Two (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4HE 0050	<p>a) Teratogenicity of 2,3,7,8-Tetrachlorodibenzo-p-dioxin (TCDD) in Mice Lacking the Expression of EGF and/or TGF-alpha.</p> <p><i>Toxicological Sciences, 26(1):103-114 (2001)</i></p> <p>b) EGF and TGF-alpha Expression Influence the Developmental Toxicity of TCDD: Dose Response and AhR Phenotype in EGF, TGF-alpha, and EGF + TGF-alpha Knockout Mice.</p> <p><i>Toxicological Sciences, 71(1):84-95 (2003)</i></p> <p>c) Lack of Expression of EGF and TGF-alpha in the Fetal Mouse Alters Formation of Prostatic Epithelial Buds and Influences the Response to TCDD.</p> <p><i>Toxicological Sciences, 76(2):427-436 (2003)</i></p>	<p>Dr. Barbara D. Abbott (25%) Dr. Angela R. Buckalew (25%) Dr. Judith E. Schmid (25%) Dr. Michael J. Devito (1%) Dr. Suzanne E. Fenton (18%) Dr. David Ross (1%)</p> <p>NHEERL, Research Triangle Park, NC</p>	<p>Studies on the Role of Growth Factor Signal Transduction Pathways in Developmental Toxicity</p>
S4HE 0053	<p>Metal Composition of Ambient PM 2.5 Influences Severity of Allergic Airways Disease in Mice.</p> <p><i>Environmental Health Perspectives, 111(12):1471-1477 (2003)</i></p>	<p>Dr. Stephen H. Gavett (35%) Dr. Najwa Haykal-Coates (10%) Dr. Lisa B. Copeland (10%) Dr. Matthew I. Gilmour (35%)</p> <p>NHEERL, Research Triangle Park, NC</p>	<p>Providing Evidence that Metal-Containing Ambient Particles May Increase the Severity of Asthma</p>

Nominations Recommended for a Level III Award (\$1000) -- Total of Thirty Two (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4HE 0145 with	Estimation of 'Giardia' Ct Values at High pH for the Surface Water Treatment Rule. <i>Journal of Environmental Science and Health Part A- Toxic/ Hazardous Substances & Environmental Engineering, A38(9):1959-1970 (2003)</i>	Dr. Mano Sivaganesan (90%) Dr. Eugene W. Rice (10%) NRMRL, Cincinnati, OH	Outstanding Research Intended to Protect the Public Health of Consumers of American Drinking Water
S4HE 0146 and	A Bayesian Method of Estimating Kinetic Parameters for the Inactivation of 'Cryptosporidium parvum' Oocysts with Chlorine Dioxide and Ozone. <i>Water Research, 37(18):4533-4543 (2003)</i>	Dr. Mano Sivaganesan (70%) Dr. Eugene W. Rice (10%) NRMRL, Cincinnati, OH	
S4IR 0127	Development of a Ct Equation for the Inactivation of 'Cryptosporidium' Oocysts with Chlorine Dioxide. <i>Water Research, 37(11):2773-2783</i>	Dr. Robert M. Clark (30%) Dr. Mano Sivaganesan (30%) Dr. Eugene W. Rice (20%) Dr. Jimmy Chen (20%) NRMRL, Cincinnati, OH	
S4IR 0130	An Approach to Integrated Ecological Assessment of Resource Condition: The Mid-Atlantic Estuaries as a Case Study. <i>Journal of Environmental Management, 66:411-427 (2002)</i>	Dr. Barbara S. Brown (50%) Dr. Wayne R. Munns, Jr. (25%) Dr. John F. Paul (25%) NHEERL, Narragansett, RI	Advancing Approaches for Integrated Assessment of Environmental Condition

Nominations Recommended for a Level III Award (\$1000) -- Total of Thirty Two (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4IR 0132	<p>a) Approaches for Integrated Risk Assessment.</p> <p>Human and Ecological Risk Assessment, 9(1):267-272 (2003)</p> <p>b) Types of Integration in Risk Assessment and Management, and Why They are Needed.</p> <p>Human and Ecological Risk Assessment, 9(1):273-279 (2003)</p> <p>c) Framework for the Integration of Health and Ecological Risk Assessment.</p> <p>Human and Ecological Risk Assessment, 9(1):281-301 (2003)</p> <p>d) Integrated Human and Ecological Risk Assessment: A Case Study of Ultraviolet Radiation Effects on Amphibians, Coral, Humans, and Oceanic Primary Productivity.</p> <p>Human and Ecological Risk Assessment, 9(1):359-377 (2003)</p> <p>e) Integrated Risk Assessment - Results from an International Workshop.</p> <p>Human and Ecological Risk Assessment, 9(1): (2003)</p>	<p>Dr. Wayne R. Munns, Jr. (25%)</p> <p>Dr. Glenn W. Suter, II (25%)</p> <p>Dr. Gilman D. Veith (8%)</p> <p>Dr. Michael D. Waters (8%)</p> <p>Dr. Lara Hansen (3%)</p> <p>Dr. Steve Hedtke (2%)</p> <p>Dr. Lawrence W. Reiter (1%)</p>	<p>Promoting Integration of Human Health and Ecological Risk Assessment and Research through International Collaboration</p>

Nominations Recommended for a Level III Award (\$1000) -- Total of Thirty Two (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4MM 0068	<p>a) Analysis of Hydroponic Fertilizer Matrixes for Perchlorate: Comparison of Analytical Techniques.</p> <p><i>The Analyst, 128(1):88-97 (2003)</i></p> <p>b) Comparison and Evaluation of Laboratory Performance on a Method for the Determination of Perchlorate in Fertilizers.</p> <p><i>Journal of Environmental Monitoring, 3(5):454-462 (2001)</i></p>	<p>Dr. Timothy W. Collette (36%) Dr. Edward T. Urbansky (36%) Dr. Matthew L. Magnuson (8%)</p> <p>NERL, Athens, GA</p>	<p>Creativity in Resolving Difficult Analytical Problems in Determining Fertilizers for Perchlorate</p>
S4MM 0070	<p>ELISA Measurement of Stachylysin in Serum to Quantify Human Exposures to the Indoor Mold 'Stachybotrys chartarum'.</p> <p><i>Journal of Occupational and Environmental Medicine, 45(6):582-591 (2003)</i></p>	<p>Dr. Jeanette M. Van Emon (40%) Dr. Stephen J. Vesper (40%)</p> <p>NERL, Cincinnati, OH</p>	<p>Developing a Technology to Quantify Exposures to Molds</p>
S4MM 0071	<p>Continuous Monitoring of Ultrafine, Fine, and Coarse Particles in a Residence for 18 Months in 1999-2000.</p> <p><i>Journal of the Air & Waste Management Association, 52:828-844 (2002)</i></p>	<p>Dr. Lance Wallace (50%) Dr. Cynthia Howard-Reed (50%)</p> <p>NERL, Research Triangle Park, NC</p>	<p>Proposing and Performing Multiyear Studies to Determine the Factors Affecting the Impact of Outdoor Air Particles on Personal Exposure</p>

Nominations Recommended for a Level III Award (\$1000) -- Total of Thirty Two (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4MM 0083	Tribromopyrrole, Brominated Acids, and Other Disinfection Byproducts Produced by Disinfection of Drinking Water Rich in Bromide. <i>Environmental Science & Technology</i> , 37(17):3782-3793 (2003)	Dr. Susan D. Richardson (55%) Dr. Alfred D. Thruston, Jr. (20%) NERL, Athens, GA	Advancing Our Understanding of the Formation of Chlorine Dioxide, Chlorine, and Chloramine DBPs Under High-Bromide Conditions
S4RA 0106	A Review and Comparison of Models for Predicting Dynamic Chemical Bioconcentration in Fish. <i>Environmental Toxicology and Chemistry</i> , 22(9):1963-1992 (2003)	Dr. M. Craig Barber (100%) NERL, Athens, GA	The Review and Evaluation of Gill Exchange Models Used for the Analysis and Prediction of Chemical Bioaccumulation in Fish
S4RA 0108	Comparable Measures of Cognitive Function in Human Infants and Laboratory Animals to Identify Environmental Health Risks to Children. <i>Environmental Health Perspectives</i> , 111(13):1630-1639 (2003)	Dr. Suzanne B. McMaster (50%) NHEERL, Research Triangle Park, NC	A Review of Comparable Methods Available to Evaluate Neurobehavioral Endpoints in Human Infants and Experimental Animals
S4RA 0112	Are We Monitoring in the Right Places for Inorganics and Radionuclides?. <i>Journal of the New England Water Works Association</i> , 117(2):102-116 (2003)	Dr. Michael R. Schock (80%) NRMRL, Cincinnati, OH	Identifying Unanticipated Drinking-Water, Human-Exposure Problems and the Water Treatment and Monitoring Implications

Nominations Recommended for a Level III Award (\$1000) -- Total of Thirty Two (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4RM 0125	Identifying Discharge Zones of Arsenic in the Goose River Basin, Maine.	Dr. William C. Sidle (100%)	
and S4RM 0126	<i>Journal of the American Water Resources Association, 39(5):1067-1077 (2003)</i> Isotopic Evaluation of Pb Occurrences in the Riverine Ecosystems of the Kankakee Watershed, Illinois-Indiana. <i>Journal of the American Water Resources Association, 37(2):379-393 (2001)</i>	NRMRL, Cincinnati, OH Dr. William C. Sidle (90%) Dr. Deborah L. Roose (5%) NRMRL, Cincinnati, OH	
S4RM 0123	Sustainability: Ecological, Social, Economic, Technological, and Systems Perspectives. <i>Clean Technologies and Environmental Policy, 5(3-4):167-180 (2003)</i>	Dr. Heriberto Cabezas (40%) Dr. Audrey L. Mayer (15%) Dr. N. Theresa Hoagland (15%) NRMRL, Cincinnati, OH	Developing a Multidisciplinary Measure of Sustainability for Complex Human-Influenced Ecosystems
S4SS 0135	Controlling Storm-Water Runoff with Tradable Allowances for Impervious Surfaces. <i>Journal of Water Resources Planning and Management, 129(5):409-418 (2003)</i>	Dr. Hale W. Thurston (25%) Dr. Haynes C. Goddard (25%) Dr. Beth Lemberg (25%) Dr. David Szlag (25%) NRMRL, Cincinnati, OH	Research into a Low-Cost, Ecologically Sound Method for Controlling Stormwater Runoff from Urbanizing Watersheds
S4TF 0102	a) Use of Hydrochloric Acid for Determining Solid-Phase Arsenic Partitioning in Sulfidic Sediments. <i>Environmental Science and Technology, 36(22):4921-4927 (2002)</i> b) Speciation of Arsenic in Sulfidic Water. <i>Geochemical Transactions, 4(1):1-7 (2003)</i>	Dr. Richard T. Wilkin (75%) Dr. Robert G. Ford (15%) NRMRL, Ada, OK	Research that Contributes to a New Understanding of the Geochemistry of Arsenic in Reducing Systems

Nominations Recommended for Honorable Mention -- Total of Thirty Seven			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4CS 0005	<p>a) Fuzzy-Logic-Based Controllers for Efficiency Optimization of Inverter-Fed Induction Motor Drives.</p> <p><i>Fuzzy Sets and Systems, 137:387-401 (2003)</i></p> <p>b) Assessment of a Wind Turbine Intelligent Controller for Enhanced Energy Production and Pollution Reduction.</p> <p><i>Wind Engineering, 25(1):23-32 (2001)</i></p>	<p>Dr. Ronald Spiegel (80%)</p> <p>NRMRL, Research Triangle Park, NC</p>	<p>Significant and Innovative Achievements in the Application of Intelligent Control Technology for Improving Risk Management Options for Environmental Problems</p>
S4C S0006	<p>On Trimodal Particle Size Distributions in Fly Ash from Pulverized Coal Combustion.</p> <p><i>Proceedings of the Combustion Institute, 29(1):441-447 (2002)</i></p>	<p>Dr. William P. Linak (25%) Dr. Charles A. Miller (25%)</p> <p>NRMRL, Research Triangle Park, NC</p>	<p>Research on Size and Composition of Fine Particles from Coal Combustion in Support of PM NAAQS Development</p>
S4CS 0009	<p>a) Attenuation of Methyl tert-Butyl Ether in Water Using Sunlight and a Photocatalyst.</p> <p><i>Water Environment Research, 74(2):122-130 (2002)</i></p> <p>b) The Photocatalytic Oxidation of Low Concentration MTBE on Titanium Dioxide from Groundwater in a Falling Film Reactor.</p> <p><i>Environmental Progress, 22(1):14-23 (2003)</i></p> <p>c) Comparison of Liquid and Gas-Phase Photooxidation Treatment of Methyl Tertiary Butyl Ether: Synthetic and Field Samples.</p> <p><i>Journal of Environmental Engineering, 128(9):782-790 (2002)</i></p>	<p>Dr. E. Sahle-Demessie (50%) Dr. Teri Richardson (10%) Dr. Julius Enriquez (20%)</p> <p>NRMRL, Cincinnati, OH</p>	<p>Successful Development of Advanced Oxidation and Stripping Technologies for the Treatment of MTBE-Contaminated Waters that are Effective and Economical</p>

Nominations Recommended for Honorable Mention -- Total of Thirty Seven (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4ER 0014 with	Predicting the Occurrence of Genetic Adaptation to Dioxin-Like Compounds in Populations of the Estuarine Fish 'Fundulus heteroclitus'. <i>Environmental Toxicology and Chemistry</i> , 21(7):1525-1532 (2002)	Dr. Diane E. Nacci (20%) Dr. Denise Champlin (20%) Dr. Laura Coiro (20%) Dr. Rick McKinney (20%) Dr. Saro Jayaraman (20%) NHEERL, Narragansett, RI	Investigating the Environmental Effects of Multi-Generational Stressors
S4ER 0028	a) Evolutionary and Ecological Effects of Multi-Generational Exposures to Anthropogenic Stressors. <i>Human and Ecological Risk Assessment</i> , 8(1):91-97 (2002) b) Stored Retinoids in Populations of an Estuarine Fish, 'Fundulus heteroclitus,' Indigenous to PCB-Contaminated and Reference Sites. <i>Archives Environmental Contamination and Toxicology</i> , 40(4):511-518 (2001) c) Effects of Benzo[alpha]pyrene Exposure on a Fish Population Resistant to the Toxic Effects of Dioxin-Like Compounds. <i>Aquatic Toxicology</i> , 57(4):203-215 (2002)	Dr. Diane E. Nacci (55%) Dr. Timothy R. Gleason (3%) Dr. Wayne R. Munns, Jr. (3%) Dr. Michael J. Kohan (10%) Dr. Marguerite Pelletier (10%) Dr. Elizabeth George (3%) Dr. Saroja Jayaraman (13%) NHEERL, Narragansett, RI	
S4ER 0015	Risks of Endocrine-Disrupting Compounds to Wildlife: Extrapolating from Effects on Individuals to Population Response. <i>Human and Ecological Risk Assessment</i> , 7(5):1027-1042 (2001)	Dr. Timothy R. Gleason (70%) Dr. Diane E. Nacci (30%) NHEERL, Narragansett, RI	
S4ER 0016	Stable Carbon Isotope Ratio and Composition of Microbial Fatty Acids in Tropical Soils. <i>Journal of Environmental Quality</i> , 32(1):198-206 (2003)	Dr. Roger A. Burke (40%) Dr. Marirosa Molina (30%) Dr. Julia E. Cox (20%) NERL, Athens, GA	Use of a Stable Carbon Isotope Ratio and Composition of Microbial Fatty Acids to Study Effects of Land Use Change on SOM Cycling

Nominations Recommended for Honorable Mention -- Total of Thirty Seven (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4ER 0017	<p>a) Relationships Between Tissue Contaminants and Defense-Related Characteristics of Oysters ('Crassostrea virginica') from Five Florida Bays.</p> <p><i>Aquatic Toxicology, 55:203-222 (2001)</i></p> <p>b) Greater Hemocyte Bactericidal Activity in Oysters ('Crassostrea virginica') from a Relatively Contaminated Site in Pensacola Bay, Florida.</p> <p><i>Aquatic Toxicology, 64:363-373 (2003)</i></p> <p>c) Stimulation of Defense Factors in Eastern Oysters Deployed to Contaminated Sites in Pensacola Bay, Florida.</p> <p><i>Aquatic Toxicology, 64:375-391 (2003)</i></p>	<p>Dr. Leah M. Oliver (30%) Dr. William S. Fisher (25%) Dr. James T. Winstead (15%) Dr. Becky L. Hemmer (5%)</p> <p>NHEERL, Gulf Breeze, FL</p>	<p>Research Demonstrating a Link Between Environmental Chemicals and Stimulation of the Oyster Defense Response</p>
S4ER 0019	<p>Comparing Responses of Macroinvertebrate Metrics to Increasing Stress.</p> <p><i>Journal of the North American Benthological Society, 22(2):308-322 (2003)</i></p>	<p>Dr. Lester L. Yuan (50%) Dr. Susan B. Norton (50%)</p> <p>NCEA, Washington, DC</p>	<p>Contributing to the Development of Scientifically Sound Methods for Protecting and Managing the Nation's Aquatic Ecosystems</p>

Nominations Recommended for Honorable Mention -- Total of Thirty Seven (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4ER 0020	<p>a) Effects of para-Nonylphenol, Methoxychlor and Endosulfan on Vitellogenin Induction and Expression in Sheepshead Minnow ('Cyprinodon variegatus').</p> <p><i>Environmental Toxicology and Chemistry</i>, 20(2):336-343 (2001)</p> <p>b) Altered Serum Sex Steroids and Vitellogenin Induction in Walleye ('Stizostedion vitreum') Collected Near a Metropolitan Sewage Treatment Plant.</p> <p><i>Archives of Environmental Contamination and Toxicology</i>, 40(3):392-398 (2001)</p> <p>c) Vitellogenin mRNA Regulation and Plasma Clearance in Male Sheepshead Minnows, ('Cyprinodon variegatus') after Cessation of Exposure to 17 Beta-Estradiol and para-Nonylphenol.</p> <p><i>Toxicology</i>, 58(1-2):99-112 (2002)</p> <p>d) A Comparison of the Estrogenic Potencies of Estradiol, Ethynylestradiol, Diethylstilbestrol, Nonylphenol and Methoxychlor in Vivo and in Vitro.</p> <p><i>Aquatic Toxicology</i>, 60(1-2):101-110 (2002)</p>	<p>Dr. Michael J. Hemmer (35%) Dr. Leroy C. Folmar (20%) Dr. Becky L. Hemmer (15%) Dr. Stephanie Friedman (10%) Dr. Marilyn Hoglund (5%) Dr. Dragoslav Marcovich (5%) Dr. N. Denslow (2%) Dr. K. Kroll (2%) Dr. C. J. Bowman (2%) Dr. E. Orlando (2%) Dr. L. J. Guilette, Jr. (2%)</p> <p>NHEERL, Gulf Breeze, FL</p>	<p>Developing and Testing Vitellogenin Assays and Developing an Estrogen-Responsive Gene Macroarray for Fish</p>
S4ER 0025	<p>Environmental Stress and Recovery: The Geochemical Record of Human Disturbance in New Bedford Harbor and Apponagansett Bay, Massachusetts (USA).</p> <p><i>The Science of the Total Environment</i>, 313:153-176 (2003)</p>	<p>Dr. James S. Latimer (50%) Dr. Warren S. Boothman (40%) Dr. Carol E. Pesch (4%) Dr. Saroja Jayaraman (4%)</p> <p>NHEERL, Narragansett, RI</p>	<p>Advancing the State of the Science of Marine Environmental Assessments Using Paleoecological Methods</p>

Nominations Recommended for Honorable Mention -- Total of Thirty Seven (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4ER 0026	Toxicity Testing, Risk Assessment, and Options for Dredged Material Management. <i>Marine Pollution Bulletin, 44:294-302 (2002)</i>	Dr. Wayne R. Munns, Jr. (50%) Dr. Theodore H. DeWitt (20%) Dr. Walter J. Berry (30%) NHEERL, Narragansett, RI	Advancing Risk-Based Evaluation and Management of In-Place Sediments
S4ES 0139	'Cryptosporidium' and 'Giardia' Occurrence in ICR Drinking Water Sources - Statistical Analyses of ICR Data. <i>Information Collection Rule Data Analysis (Book), :463-482 (2002)</i>	Dr. Michael J. Messner (75%) OGWDW, Washington, DC	Groundbreaking Bayesian Hierarchical Modeling to Estimate Microbial Occurrence in Drinking Water Sources
S4HE 0043	Birth Malformations and Other Adverse Perinatal Outcomes in Four U.S. Wheat-Producing States. <i>Environmental Health Perspectives, 111(9):1259-1264 (2003)</i>	Dr. Dina M. Schreinemachers (100%) NHEERL, Research Triangle Park, NC	A Contribution to the Understanding of the Effects of Environmental Exposures to Pesticides
S4HE 0054	Development of a Research Strategy for Integrated Technology-Based Toxicological and Chemical Evaluation of Complex Mixtures of Drinking Water Disinfection Byproducts. <i>Environmental Health Perspectives, 110(6):1013-1024 (2002)</i>	Dr. Jane Ellen Simmons (14%) Dr. Susan D. Richardson (13%) Dr. Thomas F. Speth (12%) Dr. Richard J. Miltner (12%) Dr. Glenn Rice (12%) Dr. Kathleen M. Schenck (12%) Dr. E. Sidney Hunter, III (12%) Dr. Linda K. Teuschler (13%) NERL, Athens, GA	Developing a Research Strategy for the Integrated Toxicological and Chemical Evaluation of Complex Drinking Water DBP Mixtures
S4HE 0063	Response-Surface Modeling of the Effect of 5alpha-Dihydrotestosterone and Androgen Receptor Levels on the Response to the Androgen Antagonist Vinclozolin. <i>Toxicological Sciences, 69(2):332-343 (2002)</i>	Dr. Susan Y. Euling (40%) Dr. Carole A. Kimmel (15%) NCEA, Washington, DC	Outstanding Research on Use of Mode-of-Action and Life-Stage Information for Endocrine Disruptors in Risk Assessment

Nominations Recommended for Honorable Mention -- Total of Thirty Seven (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4IR 0128	<p>a) Effects of the Androgenic Growth Promoter 17-beta-Trenbolone on Fecundity and Reproductive Endocrinology of the Fathead Minnow.</p> <p><i>Environmental Toxicology and Chemistry</i>, 22(6):1350-1360 (2003)</p> <p>b) In Vitro and in Vivo Effects of 17-beta-Trenbolone: A Feedlot Effluent Contaminant.</p> <p><i>Toxicological Sciences</i>, 70:202-211 (2002)</p>	<p>Dr. Gerald T. Ankley (15%) Dr. Jeffrey S. Denny (5%) Dr. Michael W. Hornung (5%) Dr. Kathleen M. Jensen (5%) Dr. Michael D. Kahl (5%) Dr. Joseph J. Korte (5%) Dr. Elizabeth A. Makynen (5%) Dr. Mary C. Cardon (5%) Dr. L. Earl Gray (10%) Dr. Phillip C. Hartig (5%) Dr. Christy Lambright (5%) Dr. Vickie Wilson (15%) Dr. Tala Henry (5%) Dr. Joe Ostby (5%)</p> <p>NHEERL, Duluth, MN</p>	<p>Studies to Characterize Potential Human Health and Ecological Risk of an Environmental Androgen</p>
S4IR 0133	<p>Effects of Aryl Hydrocarbon Receptor-Mediated Early Life Stage Toxicity on Lake Trout Populations in Lake Ontario During the 20th Century.</p> <p><i>Environmental Science and Technology</i>, 37(17):3864-3877 (2003)</p>	<p>Dr. Philip M. Cook (80%) Dr. Douglas D. Endicott (5%)</p> <p>NHEERL, Duluth, MN</p>	<p>Developing Methods for Assessing Toxicity Risks to Fish Populations through Diagnosis of a Major Ecological Problem</p>
S4MM 0066	<p>On-Site Solid-Phase Extraction and Laboratory Analysis of Ultra-Trace Synthetic Musks in Municipal Sewage Effluent Using Gas Chromatography-Mass Spectrometry in the Full-Scan Mode..</p> <p><i>Journal of Chromatography A</i>, 932:107-118 (2001)</p>	<p>Dr. Lantis I. Osemwengie (90%)</p> <p>NERL, Las Vegas, NV</p>	<p>Developing a New Approach for Determining Ultra-Low Levels of Synthetic Musk Fragrance in Municipal Sewage Effluent</p>
S4MM 0067	<p>A Method to Detect Viable 'Helicobacter pylori' Bacteria in Groundwater.</p> <p><i>Acta Hydrochimica Et Hydrobiologica</i>, 31(1):45-48 (2003)</p>	<p>Dr. Debbie Flanigan (50%) Dr. Mark Rodgers (50%)</p> <p>NERL, Cincinnati, OH</p>	<p>Proactive Research that will Help the U.S. EPA Protect Our Drinking Water</p>

Nominations Recommended for Honorable Mention -- Total of Thirty Seven (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4MM 0073	East versus West in the US: Chemical Characteristics of PM _{2.5} during the Winter of 1999. <i>Aerosol Science & Technology</i> , 34:88-96 (2001)	Dr. Michael P. Tolocka (48%) Dr. Paul A. Solomon (32%) Dr. William Mitchell (2%) Dr. Gary A. Norris (5%) Dr. David B. Gemmill (5%) Dr. Russell Wiener (2%) Dr. James Homolya (2%) Dr. Joann Rice (2%) NERL, Las Vegas, NV	Elucidating the Differences in Chemical Composition of PM in Urban U.S. Cities and the Importance of Wintertime Nitrate in the East
S4MM 0076	Contamination of Fish in Streams of the Mid-Atlantic Region: An Approach to Regional Indicator Selection and Wildlife Assessment. <i>Environmental Toxicology and Chemistry</i> , 22(3):545-553 (2003)	Dr. James M. Lazorchak (30%) Dr. Tala R. Henry (30%) Dr. Frank H. McCormick (30%) NERL, Cincinnati, OH	Presenting a New Concept for Assessing Wildlife Exposure Risks in Fish
S4MM 0079 with S4MM 0080	PCDD/F Emissions from Burning Wheat and Rice Field Residue. <i>Atmospheric Environment</i> , 37:4893-4899 (2003) PCDD/F, PCB, HxCBz, PAH, and PM Emission Factors for Fireplace and Woodstove Combustion in the San Francisco Bay Region. <i>Environmental Science & Technology</i> , 37(9):1758-1765 (2003)	Dr. Brian K. Gullett (90%) NRMRL, Research Triangle Park, NC Dr. Brian K. Gullett (60%) Dr. Michael D. Hays (20%) NRMRL, Research Triangle Park, NC	Determining PCDD/F Emission Factors is Support of the Agency's Dioxin Assessment Activities
S4RA 0109	The Value of Home-Based Collection of Biospecimens in Reproductive Epidemiology. <i>Environmental Health Perspectives</i> , 112(1):94-104 (2003)	Dr. John C. Rockett (50%) Dr. Sally D. Perreault (20%) NHEERL, Research Triangle Park, NC	Research on the Utility of Home-Based Collection of Biospecimens for Epidemiological Studies
S4RA 0110	Approaches to Developing Sediment Quality Guidelines for PAH. <i>PAHs: An Ecotoxicological Perspective (P.E.T. Douben, ed) Wiley, UK Chapter 17, :331-355</i>	Dr. David R. Mount (80%) NHEERL, Duluth, MN	Synthesis and Evaluation of Sediment-Quality Guidelines for PAHs

Nominations Recommended for Honorable Mention -- Total of Thirty Seven (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4RA 0115	In Search of Representativeness: Evolving the Environmental Data Quality Model. <i>Quality Assurance, 9(3&4):179-190 (2002)</i>	Dr. Deana M. Crumbling (100%) OSRTI, Washington, DC	Creating a Practical, Second-Generation Environmental Data-Quality Model to Modernize Site-Characterization Practice
S4RA 0118	A Review of Some Tracer-Test Design Equations for Tracer-Mass Estimation and Sample-Collection Frequency. <i>Environmental Geology, 43(8):867-881 (2003)</i>	Dr. Malcolm S. Field (100%) NCEA, Washington, DC	Reviewing and Advancing the State-of-the Science in Hydrologic Tracer-Test Design
S4RM 0122	a) Long-Term Performance of Permeable Reactive Barriers Using Zero-Valent Iron: Geochemical and Microbiological Effects. <i>Ground Water, 41(4):493-503 (2003)</i> b) Laboratory Evaluation of Zero-Valent Iron to Treat Water Impacted by Acid Mine Drainage. <i>Chemosphere, 53(7):715-725 (2003)</i>	Dr. Richard T. Wilkin (75%) Dr. Robert W. Puls (10%) Dr. Guy W. Sewell (5%) Dr. Mary S. McNeil (10%) NRMRL, Ada, OK	Research Related to the Application and Development of a Cost-Effective Approach for Ground Water Restoration
S4TF 0090	DBP Formation Kinetics in a Simulated Distribution System. <i>Water Research, 35(14):3483-3489 (2001)</i>	Dr. Lewis A. Rossman (50%) NRMRL, Cincinnati, OH	Contributions to Our Understanding of How Disinfection Byproducts Behave Within Drinking Water Distribution Systems
S4TF 0093	Prediction of the Vapor Pressure, Boiling Point, Heat of Vaporization and Diffusion Coefficient of Organic Compounds. <i>QSAR and Combinatorial, 22:565-674 (2003)</i>	Dr. Said Hilal (60%) Dr. S. W. Karickhoff (20%) NERL, Athens, GA	Development and Application of Mathematical Models for Predicting Physical Properties of Organic Pollutants in the Environment

Nominations Recommended for Honorable Mention -- Total of Thirty Seven (continued)			
Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4TF 0094	Use of Pretreatment Zones and Zero-Valent Iron for the Remediation of Chloroalkenes in an Oxidic Aquifer. <i>Environmental Science and Technology</i> , 37(12):2829-2835 (2003)	Dr. John F. Kenneke (85%) Dr. Steven C. McCutcheon (15%) NERL, Athens, GA	Research and Development on Permeable Reactive Barriers for the Remediation of Contaminated Aquifers
S4TF 0095	Estimates of Cloud Water Deposition at Mountain Acid Deposition Program Sites in the Appalachian Mountains. <i>Journal of the Air and Waste Management Association</i> , 53:291-308 (2003)	Dr. Ralph E. Baumgardner, Jr. (55%) NERL, Research Triangle Park, NC	Research on the Effectiveness of the 1990 CAAA in Terms of Acidic Deposition to High-Elevation Forests
S4TF 0098	Modeling How a Hurricane Barrier in New Bedford Harbor, Massachusetts, Affects the Hydrodynamics and Residence Times. <i>Estuaries</i> , 25(2):177-196 (2002)	Dr. Mohamed A. Abdelrhman (100%) NHEERL, Narragansett, RI	Examining the Impact of a Manmade Structure (a Hurricane Barrier) on Altering the Natural System
S4TF 0100	Source Apportionment of Phoenix PM2.5 Aerosol with the Unmix Receptor Model. <i>Journal of the Air & Waste Management Association</i> , 53(3):325-338 (2003)	Dr. Charles W. Lewis (25%) Dr. Gary A. Norris (25%) Dr. Teri L. Conner (25%) NERL, Research Triangle Park, NC	An Innovative Receptor-Model Methodology for Use with EPA National Air Quality Networks and SIP Development
S4TF 0101	Release and Phase Partitioning of Metals from Anoxic Estuarine Sediments during Periods of Simulated Resuspension. <i>Environmental Science and Technology</i> , 36(24):5328-5334 (2002)	Dr. Mark G. Cantwell (70%) Dr. Robert M. Burgess (20%) NHEERL, Narragansett, RI	Investigating the Mobilization and Partitioning of Metals from Estuarine Sediments During Resuspension Events

Nominations Recommended for Honorable Mention -- Total of Thirty Seven (continued)

Nom.	Titles and Citations of Submitted Papers	Eligible Authors* and Nominating Organization	Suggested Citation from Nominating Organization
S4TF 0103	Field Evaluation of the Solvent Extraction Residual Biotreatment Technology. <i>Environmental Science and Technology, 37(21):5040-5049 (2003)</i>	Dr. Susan C. Mravik (40%) Dr. A. Lynn Wood (10%) Dr. Guy W. Sewell (40%) NRMRL, Ada, OK	Research Integrating Source Zone and Down-Gradient Plume Remedial Options into a Treatment-Train Approach to Facilitate Site Restoration
S4TF 0104	Nitrate Removal Effectiveness of a Riparian Buffer Along a Small Agricultural Stream in Western Oregon. <i>Journal of Environmental Quality, 32(1):162-170 (2003)</i>	Dr. Parker J. Wigington, Jr. (57%) NHEERL, Corvallis, OR	Outstanding Research on the Role of Riparian Areas in Agricultural Landscapes in Controlling Nitrate Non-Point Source Pollution
S4TF 0105	Hydrogen Consumption during the Microbial Reductive Dehalogenation of Chlorinated Phenols and Tetrachloroethene. <i>Biodegradation, 14:285-295 (2003)</i>	Dr. Christopher S. Mazur (34%) Dr. William J. Jones (33%) Dr. Caroline Tebes-Stevens (33%) NERL, Athens, GA	Identifying Reduced Molecular-Hydrogen Concentration as a Novel Indicator of Chlorophenol Bioremediation

Key to Acronyms used in the above Table

- NCEA National Center for Environmental Assessment
- NERL National Exposure Research Laboratory
- NEIC National Enforcement Investigations Center
- NHEERL National Health and Environmental Effects Laboratory
- NRMRL National Risk Management Research Laboratory
- NVFEL National Vehicle and Fuel Emissions Laboratory
- OGWDW Office of Ground Water and Drinking Water
- OSRTI Office of Superfund Remediation Technology Innovation
- OST Office of Science and Technology

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