



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON D.C. 20460

April 30, 1992

OFFICE OF
THE ADMINISTRATOR
SCIENCE ADVISORY BOARD

EPA-SAB-RSAC-92-019

Honorable William K. Reilly
Administrator
U.S. Environmental Protection Agency
401 M. Street, S.W.
Washington, D.C. 20460

RE: SAB Award Recommendations for the 1991 Scientific and Technological
Achievement Awards Program

Dear Mr. Reilly:

The Science Advisory Board's 1991 Scientific and Technological Achievement Awards (STAA) Subcommittee has completed its review of the 114 papers nominated 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, which has made substantial improvements in the collection and distribution of these nominations. Our recommendations for awards and further improvements in the STAA program are discussed in the attached report.

The Subcommittee believes the STAA program contributes very positively towards strengthening the level of Agency scientific and technical expertise by recognizing researchers for their special achievements and the good science their research reflects. Therefore, we urge that the program receive support from the highest levels of Agency management and that the winners receive broad recognition both inside and outside the Agency. EPA should initiate press releases and EPA Journal feature articles profiling the achievements of the award recipients.

We are pleased to have participated in this process and believe it is appropriate for the Board to continue this annual review function. The Subcommittee also recommends the Agency establish a minimum cash award of five hundred dollars (\$500.00) for all eligible award recipients, regardless of the level of the award or the number of EPA authors. Further, the Subcommittee recommends that EPA establish a separate award for sustained and outstanding scientific publications by its senior scientists and that EPA add a category to the STAA for technical accomplishments in the field of risk management and policy formulation.

The Subcommittee believes papers selected to receive awards report the results of research fully equivalent to some of the best in most of the fields nominated. Recognizing the current Agency needs and focus in the areas of reproductive and developmental toxicology, multimedia transport and pollution control, wetlands protection, and ecological and human non-cancer risk assessment, we look forward to the maturation of research programs and Agency expertise that will lead to the nomination of superior research papers in these areas.

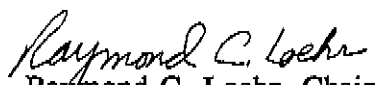
The Subcommittee identified thirteen papers of notable quality characterized by careful, thorough, extensive work which did not reach the award level but definitely deserve honorable mention. The Subcommittee hopes these authors will be recognized appropriately for their high quality work.

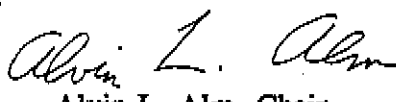
The Subcommittee recommends that Agency managers be encouraged to nominate peer reviewed papers from all programs and areas of scientific research. We also recommend that the Office of Research and Development revise its criteria for review articles. In a few cases, greater care should be exercised by the nominating official to ensure nominations are qualified and the packages are complete; including proper endorsements and justifications where EPA employees are not the senior authors.

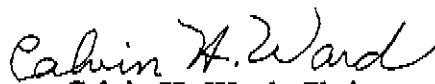
To ensure the credibility of the review process and broaden the base of expertise used in the review, the Subcommittee obtained additional reviews from eight experts by mail. We did not attempt to ensure equality of numbers or proportion of awards across the categories or laboratories. Rather, good science and technology were our sole criteria for recommending awards.

The SAB would appreciate being informed of the final disposition of awards. We look forward to serving the Agency again in this important activity.

Sincerely,


Raymond C. Loehr, Chair
Executive Committee
Science Advisory Board


Alvin L. Alm, Chair
Research Strategies
Advisory Committee
Science Advisory Board


Calvin H. Ward, Chair
1991 Scientific and
Technological Achievement
Awards Subcommittee



United States
Environmental
Protection Agency

Science Advisory
Board (A-101)

EPA-SAB-RSAC-92-019
April 1992

AN SAB REPORT: RECOMMENDATIONS ON THE 1991 EPA STAA NOMINATIONS

**PREPARED BY THE SCIENTIFIC AND
TECHNOLOGICAL ACHIEVEMENT
AWARDS SUBCOMMITTEE OF THE
RESEARCH STRATEGIES ADVISORY
COMMITTEE**

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Dr. Edward S. Bender, Biologist and Designated Federal Official, Science Advisory Board, 401 M Street, S.W., Washington, D.C. 20460

Mrs. Marcia K. Jolly, Secretary to the Designated Federal Official

ABSTRACT

The report represents the conclusions and recommendations of the U.S. Environmental Protection Agency's Science Advisory Board regarding the 1991 EPA Scientific and Technological Achievement Awards (STAA) program. The Scientific and Technological Achievement Awards Subcommittee of the Science Advisory Board reviewed and evaluated the 1991 nominations for the STAA program. The Subcommittee evaluated 114 nominations of scientific papers representing some of the best of the scientific foundation of the EPA regulatory programs. The Subcommittee recommended twenty-nine papers (25% of the nominations) for awards at three levels and also recommended to the Office of Research and Development that thirteen additional papers be recognized with honorable mention. The Subcommittee made no attempt to ensure equality of numbers or proportion of awards across the categories of science and technology or Agency research components. The Subcommittee recommended awards for scientists from nine EPA research laboratories and two program offices. The Subcommittee recommended the Agency develop additional opportunities to reward scientific accomplishments, provide a minimum cash award of \$500.00, and recognize winners in other special ways. The Subcommittee also encouraged the Agency to support the program at the highest levels of management.

KEY WORDS: Awards, Scientific Achievements

U.S. ENVIRONMENTAL PROTECTION AGENCY

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 a balanced expert assessment of scientific matters related to problems facing the Agency. This report has not been reviewed for approval by the Agency; and hence, the contents of this report do not necessarily represent the views and policies of the Environmental Protection Agency or other agencies in Federal government. Mention of trade names or commercial products does not constitute a recommendation for use.

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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 1991 nominations for the STAA program. The Subcommittee evaluated 114 nominations of scientific and technical papers that were submitted by EPA research laboratory directors and program office division directors. The Subcommittee met in Washington, D.C. on March 2-3, 1992 to determine award recommendations.

The Subcommittee recommended twenty-nine papers for awards and recommended that thirteen additional papers be recognized with honorable mention. The Subcommittee made no attempt to ensure equality of numbers or proportion of awards across the categories of science and technology or Agency research components. However, the Subcommittee recommended awards for papers from nine EPA research laboratories and two program offices.

The Subcommittee recommended that the Agency develop additional opportunities to reward scientific accomplishments, provide a minimum cash award of \$500.00, and recognize the winners through special publications, acknowledgement at the EPA awards program, and by press releases to professional societies and appropriate journals. The Subcommittee also encouraged the Agency to support the program at the highest levels of management. They also recommended that EPA add an award category for "Risk Management and Policy Formulation" to encourage submission of peer reviewed scientific and technical publications in this field and that EPA establish a separate award for senior scientists who sustain a record of outstanding scientific and technological publications.

2. INTRODUCTION

2.1 Request and Charge for Science Advisory Board Review

At the request of the Office of Research and Development (ORD), the Science Advisory Board agreed to convene a committee to review and evaluate scientific papers published by EPA employees nominated for the 1991 EPA Scientific and Technological Achievement Awards program. The SAB authorized the formation of a Subcommittee to recommend papers for awards. The Subcommittee was asked to recommend papers for awards based on the rules developed by ORD. In December 1991 the Office of Research Program Management (ORPM) in ORD provided the SAB with copies of 114 nominations, a Statement of the Principles and Processes for the awards program, and rules and advice to nominators. ORPM grouped the papers into six categories of science and technology and reviewed the nominations for eligibility.

The SAB advises the Assistant Administrator for Research and Development on its evaluation and judgement of the nominations, and recommends the winning EPA authors for each of three Levels of Award. Level 1 awards are for authors who have accomplished an exceptionally high-quality research or technological effort. These awards recognize the initiation or general revision of scientific/technological principles or procedures, or highly significant improvements in the value of a device, program or service to the public. Level 2 awards are to nominees who have accomplished notable excellent research or technological effort. This award is for research that has timely consequences and contributes to an important achievement within its discipline. Level 3 awards are to nominees who have accomplished an unusually good research or technological effort. Research for this award must relate to a mission or organizational component of the EPA, or significantly affect an area of science/technology.

2.2 Subcommittee Review Procedures

Copies of all papers and the award program procedures were sent to Subcommittee members. Each member reviewed a portion of the nominated papers based on their expertise. 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 reviewed. Prior to making final recommendations for awards, each paper and nomination was reviewed for compliance with the STAA program rules. To ensure the credibility of the review process and broaden the base of expertise used in the review, the Subcommittee obtained additional reviews from eight experts by mail and would like to recognize the assistance of the following reviewers:

Dr. Rudolph Bieri	Professor of Chemistry, Emeritus College of William and Mary
Dr. Warren B. Crummett	Analytical Services, Dow Chemical Corp. (retired)
Dr. Rolf Hartung	Professor of Public Health, University of Michigan
Dr. Timothy Larson	Professor of Environmental Engineering, University of Washington
Dr. Donald Mackay	Professor of Chemical Engineering, University of Toronto
Dr. Jerald L. Schnoor	Professor of Environmental Engineering University of Iowa
Dr. William H. Smith	Professor of Forest Biology Yale University
Dr. Thomas O. Tiernan	Professor of Chemistry and Director, Toxic Contaminant Research Program Wright State University

The Subcommittee met on March 2 and 3, 1992, in Washington, D.C. in a closed meeting. Consistent with the requirements of the Federal Advisory Committee Act, this closed meeting was announced in a Federal Notice signed by the Administrator of EPA. All Subcommittee members were present.

3. EVALUATION OF THE 1990 SCIENTIFIC AND TECHNOLOGICAL ACHIEVEMENT AWARDS NOMINATIONS

3.1 Award Recommendations

The EPA authors recommended for awards include scientists from nine EPA research laboratories and two program offices. Awards were recommended for each category of science and technology. Twenty-nine papers were recommended for awards. A summary of the distribution of award recommendations among categories is presented in Table 1.

The Subcommittee recommends the Agency should emphasize the publication of its basic research in support of its regulatory program in peer reviewed journals of the highest caliber. Basic regulatory research is the source of good science and provides the foundation for the Agency's regulatory programs. It is important that this research be subject to rigorous technical evaluation

TABLE 1: Summary of 1991 Award Recommendations

NOMINATION CATEGORIES	Number Nominated	Level III	Level II	Level I	Total Awards	(Percent)
CONTROL TECHNOLOGY	24	4	1	0	5	(21%)
ECOLOGY	10	1	1	1	3	(30%)
HEALTH EFFECTS	25	6	1	0	7	(28%)
MONITORING & MEASUREMENT	21	3	1	0	4	(19%)
REVIEWS	17	3	1	1	5	(29%)
TRANSPORT & FATE	17	3	2	0	5	(29%)
TOTALS	114	20	7	2	29	(25%)

and peer review. In addition, this emphasis on the quality of technical achievements enhances the stature of the Agency's research and its scientific and technical staff.

The Subcommittee recommendations for awards are listed below for six categories of science and technology: Control Systems and Technology, Ecology, Health Effects, Monitoring and Measurements, Reviews, and Transport and Fate.

3.1.1 CONTROL SYSTEMS AND TECHNOLOGY

Level II Award

C9111

"Modeling Inactivation of Giardia lamblia"

Journal:

Journal of Environmental Engineering

Volume 116, Number 5, Pages 837-853, Sep/Oct 1990.

Submitting Office/Laboratory:

Risk Reduction Engineering Laboratory

EPA Author(s):

Robert M. Clark

Level III Awards

C9105

"Biodegradation of Petroleum Hydrocarbons by Aquifer Microorganisms under Denitrifying Conditions"

Journal:

Environmental Science & Technology

Volume 25, Number 1, Pages 68-76, January 1991.

Submitting Office/Laboratory:

Environmental Research Laboratory - Ada

EPA Author(s):

Stephen R. Hutchins

Guy W. Sewell

Garmon A. Smith

Non-EPA Authors(s):

David A. Kovacs

C9115

"Mouse - A Computerized Uncertainty Analysis System"

Journal:

Hazardous Waste & Hazardous Materials

Volume 7, Number 4, Pages 373-384, Fall 1990.

Submitting Office/Laboratory:
Risk Reduction Engineering Laboratory

EPA Author(s):
Albert J. Klee

C9119

"Minimization of Transient Emissions from Rotary Kiln Incinerators"

Journal:
Combustion Science and Technology
Volume 74, Number 1-6, Pages 311-325, Nov/Dec 1990.

Submitting Office/Laboratory:
Air & Energy Engineering Research Laboratory

EPA Author(s):
Paul M. Lemieux
William P. Linak
Joseph A. McSorley

Non-EPA Author(s):
Jost O. L. Wendt
James E. Dunn

Combine C9122 and C9123 as one Level III

"Evaluating the Costs of Packed-Tower Aeration and GAC for Controlling Selected Organics"

Journal:
Journal of American Water Works Association
Volume 83, Number 1, Pages 49-57, January 1991.

Submitting Office/Laboratory:
Risk Reduction Engineering Laboratory

EPA Author(s):
Jeffrey Q. Adams
Robert M. Clark

AND

"Evaluation of BAT for VOCs in Drinking Water"

Journal:
Journal of Environmental Engineering
Volume 117, Number 2, Pages 247-268, March/April 1991.

Submitting Office/Laboratory:
Risk Reduction Engineering Laboratory

EPA Author(s):
Robert M. Clark
Jeffrey Q. Adams

3.1.2 ECOLOGY

Level I Award

E9101

"Modelling Bioaccumulation of Organic Pollutants in Fish with an Application to PCBs in Lake Ontario Salmonids"

Journal:
Canadian Journal of Fisheries and Aquatic Science
Volume 48, Number 2, Pages 318-337, February 1991.

Submitting Office/Laboratory:
Environmental Research Laboratory - Athens

EPA Author(s):
Mahlon C. Barber
Luis A. Suarez
Ray R. Lassiter

Level II Award

E9102

"A Physiologically Based Toxicokinetic Model for the Uptake and Disposition of Waterborne Organic Chemicals in Fish"

Journal:
Toxicology and Applied Pharmacology
Volume 106, Pages 433-447, 1990.

Submitting Office/Laboratory:
Environmental Research Laboratory - Duluth

EPA Author(s):
John W. Nichols
James M. McKim, III
Russell J. Erickson

Non-EPA Author(s):
Melvin E. Anderson
Michael L. Gargas
Harvey J. Clewell, III

Level III Award

E9104

"Application of Toxicity Identification Evaluation Procedures to the Ambient Waters of the Colusa Basin Drain, CA"

Journal:
Environmental Toxicology and Chemistry
Volume 10, Number 7, Pages 891-900, 1991.

Submitting Office/Laboratory:
Environmental Research Laboratory - Duluth

EPA Author(s):
Teresa J. Norberg-King
Elizabeth J. Durhan
Gerald T. Ankley
Non-EPA Author(s):
Eric Robert

3.1.3 HEALTH EFFECTS

Level II Award

H9113

"Neonatal Exposure to Triethyltin Disrupts Olfactory Discrimination Learning in Preweanling Rats"

Journal:
Neurotoxicology & Teratology
Volume 13, Number 5, Pages 515-524, Sept/Oct 1991.

Submitting Office/Laboratory:
Health Effects Research Laboratory

EPA Author(s):
Mark E. Stanton

Level III Awards

H9105 - Multiple Papers

- 1 - "Cyclophosphamide Teratogenesis: Evidence for Compensatory Responses to Induced Cellular Toxicity"

Journal:
Teratology
Volume 42, Pages 473-482, 1990.

- 2 - "Cell Cycle Alterations and Cell Death in Cyclophosphamide Teratogenesis"

Journal:
Teratogenesis, Carcinogenesis, and Mutagenesis
Volume 9, Pages 199-209, 1989.

Submitting Office/Laboratory:
Health Effects Research Laboratory

EPA Author(s):
John M. Rogers
Edward J. Massaro
Neil Chernoff

Non-EPA Author(s):
B. Magnus Francis
Kathleen K. Sulik
Kenneth H. Elstein
Robert M. Zucker
Mitchell B. Rosen
Ajit J. Alles

H9106

"The Risk of Lead Toxicity in Homes with Lead Paint Hazard"

Journal:
Environmental Research
Volume 54, Number 1, Pages 1-7, January 1991.

Submitting Office/Laboratory:
Office of Technology Transfer & Regulatory Support

EPA Author(s):
Ronnie Levin
Joel Schwartz

H9107 - Multiple Papers

- 1 - "Characterization of the Origins of Astrocyte Response to Injury Using the Dopaminergic Neurotoxicant, 1-methyl-4-phenyl-1,2,3,6-tetrahydropyridine"

Journal:

Brain Research

Volume 521, Numbers 1 & 2, Pages 73-80, June 25, 1990.

- 2 - "1-Methyl-4-Phenyl-1,2,3,6-Tetrahydropyridine (MPTP)-Induced Damage of Striatal Dopaminergic Fibers Attenuates Subsequent Astrocyte Response to MPTP"

Journal:

Neuroscience Letters

Volume 117, Numbers 1 & 2, Pages 228-233, September 4, 1990.

Submitting Office/Laboratory:

Health Effects Research Laboratory

EPA Author(s):

James P. O'Callaghan

Diane B. Miller

Non-EPA Author(s):

John F. Reinhard, Jr.

H9109

"Methoxychlor Accelerates Embryo Transport Through The Rat Reproductive Tract"

Journal:

Toxicology and Applied Pharmacology

Volume 102, Pages 110-116, 1990.

Submitting Office/Laboratory:

Health Effects Research Laboratory

EPA Author(s):

Audrey M. Cummings

Sally Perreault Darney

H9114

"Behavioral and Neurochemical Changes in Rats Dosed Repeatedly with Diisopropylfluorophosphate"

Journal:

Journal of Pharmacology and Experimental Therapeutics

Volume 256, Number 2, Pages 741-750, January 1991.

Submitting Office/Laboratory:
Health Effects Research Laboratory

EPA Author(s):
Philip J. Bushnell
Stephanie S. Padilla
Thomas R. Ward
Non-EPA Author(s):
Carey N. Pope
Valerie B. Olszyk

H9119

"Passive Smoking, Air Pollution, and Acute Respiratory Symptoms in a Diary study of Student Nurses"

Journal:
American Review of Respiratory Disease
Volume 141, Number 1, Page 6, January 1990.

Submitting Office/Laboratory:
Office of Policy Analysis

EPA Author(s):
Joel Schwartz
Non-EPA Author(s):
Scott Zeger

3.1.4 MONITORING AND MEASUREMENTS

Level II Award

M9112

"Identification of Non-polar Toxicant in Effluents Using Toxicity-based Fractionation with Gas Chromatography/Mass Spectrometry"

Journal:
Analytical Chemistry
Volume 63, Pages 277-283, 1991.

Submitting Office/Laboratory:
Environmental Research Laboratory - Duluth

EPA Author(s):
Lawrence P. Burkhard
Elizabeth J. Durhan

Non-EPA Author(s):
Marta T. Lukasewycz

Level III Awards

M9101

"Recovery of 3-Chloro-4-(dichloromethyl)-5-hydroxy-2(5H)-furanone from Water Samples on XAD Resins and the Effect of Chlorine on Its Mutagenicity"

Journal:
Environmental Science and Technology
Volume 24, Number 6, Pages 863-867, 1990.

Submitting Office/Laboratory:
Risk Reduction Engineering Laboratory

EPA Author(s):
Kathleen M. Schenck
John R. Meier
H. Paul Ringhand
Frederick C. Kopfler

M9103

"Taxonomic Level and Sample Size Sufficient for Assessing Pollution Impacts on the Southern California Bight Macrobenthos"

Journal:
Marine Ecology Progress Series
Volume 67, Number 3, Pages 251-262, November 1990.

Submitting Office/Laboratory:
Environmental Research Laboratory - Narragansett

EPA Author(s):
Steven P. Ferraro
Faith A. Cole

M9105

"New Source Identification of Mercury Contamination in the Great Lakes"

Journal:
Environmental Science and Technology
Volume 24, Number 7, Pages 1059-1069, July 1990.

Submitting Office/Laboratory:
Environmental Research Laboratory - Duluth

EPA Author(s):

Gary E. Glass

Non-EPA Author(s):

John A. Sorensen

Kent W. Schmidt

George R. Rapp

3.1.5 REVIEWS

Level I Award

R9101

"Histological and Histopathological Evaluation of the Testis"

Journal:

Reference Text

Pages 286, December 1990.

Submitting Office/Laboratory:

Office of Health and Environmental Assessment

EPA Author(s):

Eric D. Clegg

Non-EPA Author(s):

Lonnie D. Russell

Robert Ettlin

Amiya P. Sinha-Hikim

Level II Award

R9107

"An Overview of Maternal Toxicity and Prenatal Development: Considerations of Developmental Toxicity Hazard Assessments"

Journal:

Toxicology

Volume 59, Pages 111-125, 1989.

Submitting Office/Laboratory:

Health Effects Research Laboratory

EPA Author(s):
Neil Chernoff
John M. Rogers
Robert J. Kavlock

Level III Awards

R9104

"A Critical Review of the Developmental Toxicity and Teratogenicity of
2,3,7,8-Tetrachlorodibenzo-p-Dioxin: Recent Advances Toward Understanding the
Mechanism"

Journal:
Teratology
Volume 42, Pages 619-627, 1990.

Submitting Office/Laboratory:
Health Effects Research Laboratory

EPA Author(s):
Linda S. Birnbaum
Barbara D. Abbott
Non-EPA Author(s):
Laurie C. Haws

R9109

"Role of Structure-Activity Relationship Analysis in Evaluation of Pesticides for Potential
Carcinogenicity"

Journal:
American Chemical Society Symposium Series
Volume 414, Pages 175-200, 1989.

Submitting Office/Laboratory:
Office of Toxic Substances

EPA Author(s):
Yin-tak Woo
Joseph C. Arcos

R9117

"An Overview of the Technical Implications of Methanol and Ethanol as Highway Motor
Vehicle Fuels"

Journal:
Society of Automotive Engineers Technical Paper Series
Volume SP889, Number 912413, Pages 30, October 1991.

Submitting Office/Laboratory:
Atmospheric Research & Exposure Assessment Laboratory

EPA Author(s):
Frank Black

3.1.6 TRANSPORT AND FATE

Level II Awards

T9102

"The Interaction of Vapour Phase Organic Compounds with Indoor Sinks"

Journal:
Indoor Air - International Journal of Indoor Air Quality and Climate
Volume 1, Number 1, Pages 23-35, March 1991.

Submitting Office/Laboratory:
Air & Energy Engineering Research Laboratory

EPA Author(s):
Bruce A. Tichenor
Leslie E. Sparks
Non-EPA Author(s):
Zhish Guo
James E. Dunn
Mark A. Mason

T9114

"Significance of the Surface Microlayer to the Environmental Fate of
Di(2-ethylhexyl)phthalate Predicted from Marine Microcosms"

Journal:
Marine Chemistry
Volume 31, Pages 231-269, 1990.

Submitting Office/Laboratory:
Environmental Research Laboratory - Narragansett

EPA Author(s):
Earl W. Davey
Kenneth T. Perez
Albert E. Soper
Neal F. Lackie
George E. Morrison
Non-EPA Author(s):
Roxanne Johnson
James F. Heltshe

Level III Awards

T9103

"Ester Hydrolysis Rate Constant Prediction from Infrared Interferograms"

Journal:
Environmental Science and Technology
Volume 24, Number 11, Pages 1671-1676, November 1990.

Submitting Office/Laboratory:
Environmental Research Laboratory - Athens

EPA Author(s):
Timothy W. Collette

T9113

"Regiospecific Dechlorination of Pentachlorophenol by Dichlorophenol-Adapted Microorganisms in Freshwater, Anaerobic Sediment Slurries"

Journal:
Applied and Environmental Microbiology
Volume 57, Number 8, Pages 2293-2301, August 1991.

Submitting Office/Laboratory:
Environmental Research Laboratory - Athens

EPA Author(s):
John E. Rogers
Non-EPA Author(s):
Frank O. Bryant
Dorothy D. Hale

"Identification of Volatile Hydrocarbons as Mobile Source Tracers for Fine-Particulate Organics"

Journal:

Environmental Science and Technology
Volume 24, Number 4, Pages 538-542, April 1990.

Submitting Office/Laboratory:

Atmospheric Research & Exposure Assessment Laboratory

EPA Author(s):

Roy B. Zweidinger

Robert K. Stevens

Charles W. Lewis

Non-EPA Author(s):

Hal Westburg

3.2 Honorable Mention

The Subcommittee identified thirteen papers which did not reach award level but which deserve honorable mention for their quality and quantity of work. In several cases, these papers should form the foundation for significant future accomplishments that may merit awards. The Subcommittee hopes that these authors will be recognized appropriately for their high quality of work.

Honorable Mention

C9104

"Reduction in Bacterial Densities of Wastewater Solids by Three Secondary Treatment Processes"

Journal:

Research Journal of the Water Pollution Control Federation
Volume 62, Number 2, Pages 178-184, March/April 1990.

Submitting Office/Laboratory:

Risk Reduction Engineering Laboratory

EPA Author(s):

Joseph B. Farrell

B. Vincent Salotto

Albert D. Venosa

C9109

"Characterizing Surface Waters That May Not Require Filtration"

Journal:

Journal American Water Works Association

Volume 82, Number 12, Pages 40-50, December 1990.

Submitting Office/Laboratory:

Risk Reduction Engineering Laboratory

EPA Author(s):

Edwin E. Geldrich

James A. Goodrich

Robert M. Clark

E9107

"Toxicity of Fluoranthene in Sediment to Marine Amphipods: A Test of the Equilibrium Partitioning Approach to Sediment Quality Criteria"

Journal:

Environmental Toxicology and Chemistry

Volume 9, Pages 1071-1080, 1990.

Submitting Office/Laboratory:

Environmental Research Laboratory - Narragansett

EPA Author(s):

Richard C. Swartz

Donald W. Schults

George R. Ditsworth

Janet O. Lamberson

Non-EPA Author(s):

Theodore H. DeWitt

H9112

"Toxic-induced Hypothermia and Hypometabolism: Do They Increase Uncertainty in the Extrapolation of Toxicological Data from Experimental Animals to Humans?"

Journal:

Neuroscience & Biobehavioral Reviews

Volume 15, Pages 95-98, 1991.

Submitting Office/Laboratory:
Health Effects Research Laboratory

EPA Author(s):
Christopher J. Gordon

R9113

"Concerns With Using Chlorine Dioxide Disinfection In The USA"

Journal:
Journal of Water Supply Research and Technology - AQUA
Volume 39, Number 6, Pages 376-386, December 1990.

Submitting Office/Laboratory:
Risk Reduction Engineering Laboratory

EPA Author(s):
Benjamin W. Lykins, Jr.
James A. Goodrich
John C. Hoff

R9115

"Retrospective Study of the Water Quality Issues of the Upper Potomac Estuary"

Journal:
Reviews in Aquatic Sciences
Volume 3, Number 1, Pages 11-40, 1990.

Submitting Office/Laboratory:
Environmental Research Laboratory - Narragansett

EPA Author(s):
Norbert A. Jaworski

R9116

"Definition of Adverse Effects for the Purpose of Establishing Secondary National Ambient Air Quality Standards"

Journal:
Journal of Environmental Quality
Volume 19, Number 4, Pages 635-639, Oct/Dec 1990.

Submitting Office/Laboratory:
Environmental Research Laboratory - Corvallis

EPA Author(s):
David T. Tingey
William E. Hogsett
Non-EPA Author(s):
Sandra Henderson

T9107

"Transport of Dissolved Substances with Second-Order Reaction"

Journal:
Water Resources Research
Volume 15, Number 7, Pages 1757-1762, July 1989.

Submitting Office/Laboratory:
Environmental Research Laboratory - Ada

EPA Author(s):
Scott R. Yates
Carl G. Enfield

T9108

"Comparison of Aqueous and Solid Phase Uptake for Hexachlorobenzene in the Tellinid Clam, *Macoma nasuta*(Conrad): A Mass Balance Approach"

Journal:
Environmental Toxicology and Chemistry
Volume 9, Pages 221-231, 1990.

Submitting Office/Laboratory:
Environmental Research Laboratory - Narragansett

EPA Author(s):
Bruce L. Boese
Henry Lee, II
David T. Specht
Robert C. Randall

Non-EPA Author(s):
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T9109

"Hydrolysis of Chlorostilbene Oxide. II. Modeling of Hydrolysis in Aquifer Samples and in Sediment-Water Systems"

Journal:
Environmental Toxicology and Chemistry
Volume 9, Number 8, Pages 963-973, August 1990.

Submitting Office/Laboratory:
Environmental Research Laboratory - Athens

EPA Author(s):
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T9110

"Distribution of Hydrophobic Ionogenic Organic Compounds Between Octanol and Water:
Organic Acids"

Journal:
Environmental Science and Technology
Volume 24, Number 12, Pages 1795-1803, December 1990.

Submitting Office/Laboratory:
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EPA Author(s):
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T9111

"Predicting Bioaccumulation Potential: A Test of a Fugacity-Based Model"

Journal:
Archives of Environmental Contamination and Toxicology
Volume 19, Number 3, Pages 386-394, May/June 1990.

Submitting Office/Laboratory:
Environmental Research Laboratory - Narragansett

EPA Author(s):
Steven P. Ferraro
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David T. Specht

"Comparison of Numerical Schemes for Solving a Spherical Particle Diffusion Equation"

Journal:

Water Resources Research

Volume 26, Number 5, Pages 843-853, May 1990.

Submitting Office/Laboratory:

Environmental Research Laboratory - Athens

EPA Author(s):

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3.3 Other Findings of the Subcommittee

The Subcommittee is pleased with the overall quality of the nominations for the 1991 STAA program. This is reflected by the increased number of papers recommended for awards and honorable mention this year. The Subcommittee is also pleased to recommend two papers for higher level awards in the Ecology category which is an improvement over the 1990 recommendations. Recognizing the current Agency needs and focus in the areas of reproductive and developmental toxicology, waste minimization, multimedia transport and pollution control, wetlands protection and ecological risk assessment, we look forward to the maturation of research programs and Agency expertise that will lead to the nomination of superior research papers in these areas. Indeed the authors of several papers recommended for honorable mention have laid a good foundation for research that when carried to completion should merit awards.

The Subcommittee believes that the STAA program contributes very positively towards strengthening the level of Agency expertise by recognizing researchers for their special achievements. In addition, the Subcommittee believes papers selected to receive awards report the results of research fully equivalent to some of the best in most of the fields nominated. Therefore, we urge that the STAA program receive support from the highest levels of agency management and that the winners receive broad recognition throughout the Agency. We are pleased to have participated in this process and believe that it is appropriate for the Board to continue this annual review function. In the past, this Subcommittee recommended that the Agency acknowledge and publicize these award winners through a special publication, such as an EPA Journal feature article and prepare news releases describing each award for distribution to the primary scientific/technical societies of each awardee and to the peer reviewed journals that published the work. We also recommend these awards be presented at the Annual EPA Awards ceremony. If appropriate, the Subcommittee Chair would be honored to participate in the awards ceremony.

The administration of the STAA program, under the OPRM has improved significantly over the past year. The nomination packages are easier to review, they were delivered early, in an organized fashion, and there were fewer discrepancies among the nominations with the program rules and criteria. The Subcommittee appreciates the continuing efforts of the Agency staff to help the Subcommittee with its review and offers the following suggestions for further improvement of the STAA program:

1. The Agency should consider revising its criteria for evaluating review articles. The criteria for awards in the review category should value papers that represent a synthesis and a critical analysis of previous work that leads to a better understanding or provides new insight in a particular discipline. Likewise papers with broad applications would be rated highly.
2. The Agency should also encourage nominations and recognize the accomplishments of scientists and engineers working in the areas of risk management or policy formulation. These papers are important to the Agency and have significant regulatory impact. These authors should be encouraged to publish their achievements in professional journals which meet the criteria for peer review that are imposed on the STAA program nominations. Therefore, the Subcommittee recommends that EPA add a category for Risk Management

and Policy Formulation to the STAA program and that the SAB expand the expertise of this Subcommittee to review such nominations.

3. The Agency should consider designating an award category in the STAA program for "Emerging Issues/ Innovative Approaches". Such research could focus on innovative environmental science and technology and policy questions that address problems requiring long-term effort. The composition of themes identified in this area should change based on long term Agency priorities. Through this recognition, Agency scientists would be encouraged to consider longer term issues as well as short term needs in designing their research programs.

4. The Agency should remind managers that technical publications must reflect a significant contribution by the senior EPA author. Several nominations were eliminated from consideration because they appeared to be based almost entirely on the concepts and work of a contractor. In one such case, the contractor personnel were not even included as authors. The Subcommittee urges the Agency to exclude any such papers from the STAA program in the future.

5. The Subcommittee recommends that the Agency encourage its scientists to be discriminating in their selection of journals for publication of scientific articles. The Subcommittee prefers articles published in journals which are recognized for the quality of their peer review and frequently cited as authoritative sources of scientific theory and accomplishments.

6. The Subcommittee recommends the Agency establish \$500.00 as the minimum cash award any author would receive in the STAA program, regardless of the level of award or number of eligible authors.

7. The Subcommittee encourages the Agency to establish a separate award to recognize sustained and outstanding scientific publications by some of its senior scientists. Such awards would be very beneficial to the morale and retention of outstanding scientists.

In summary, the Subcommittee has identified twenty-nine nominations for awards and thirteen nominations for honorable mention from the 1991 STAA program. The Subcommittee commends EPA for improved administration of the program and highly recommends that EPA publicize the accomplishments of winners and develop opportunities for awards, in addition to the STAA, to recognize outstanding scientific careers and scientific achievements in the field of risk management and policy formulation.