

Report of the 1984 Scientific and Technological  
Achievement Awards Subcommittee

CONTENTS

Memorandum to the Assistant Administrator for Research and Development,  
dated February 8, 1985, reporting results of Subcommittee's deliberations,  
and attachments

- Attachment I: SAB Recommendations for Awards
- Attachment II: Subcommittee Roster
- Attachment III: Number of Awards Recommended by SAB  
(Totals by Category and Level)

Letter to the Assistant Administrator for Research and Development,  
dated February 26, 1985, with comments and observations regarding the  
awards program

Science Advisory Board  
U. S. Environmental Protection Agency  
Washington, D.C. 20460



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

February 8, 1985

OFFICE OF  
THE ADMINISTRATOR

MEMORANDUM

SUBJECT: SAB Review of Papers Nominated for the 1984 Scientific and Technological Achievement Awards

FROM: Ernst Linde *Ernst Linde*  
Executive Secretary  
Science Advisory Board (A-101F)

Through: Terry P. Yosie *Terry P. Yosie*  
Staff Director  
Science Advisory Board (A-101)

TO: Bernard D. Goldstein  
Assistant Administrator  
for Research and Development (RD-672)

The Science Advisory Board's 1984 Scientific and Technological Achievement Awards Subcommittee chaired by Dr. Rolf Hartung met on January 31 and February 1, 1985 and completed its review of the 86 papers transmitted to the Board for its recommendations. The Subcommittee judged the nominations in light of the Statement of Principles and Processes (Revised 1983) attached to your memorandum of June 5, 1984 to ORD Office Directors and ORD Laboratory Directors a copy of which was also sent to the Board.

A listing of the Subcommittee's recommendations for awards is attached (Attachment I). Briefly, of the 86 papers nominated, 31 are recommended for awards. Two papers are recommended for Level I awards. A Table showing the number of recommended awards by category and level and a Subcommittee Roster are also attached (Attachments II and III).

The Subcommittee welcomed this opportunity to be of assistance to the Agency and to support your efforts to promote and recognize scientific and technological achievement by Agency employees. The Subcommittee had a number of comments and observations regarding this program which will be transmitted in a letter to you from the Chairman, Dr. Hartung.

Attachments (3)

cc: Dr. Cortesi  
Dr. Swaby  
Dr. Yosie  
Dr. Hartung

1984 Scientific and Technological Achievement Awards

Awards Recommended by SAB: Level II Awards (8)  
(Cont'd)

<u>Category</u>	<u>Title and Author(s)</u>	<u>Laboratory</u>
TRANSPORT AND RATE	"Atmospheric Oxidation of Hydrocarbons: Formation of Hydroperoxides and Peroxyacids," Atmospheric Environment, Vol. 17, No. 11, pp. 2259-2263, 1983. Dr. Phillip L. Hanst and Mr. Bruce W. Gay, Jr.	ESRL/RTP
	"Photochemical Reactivity of Perchloroethylene: A New Appraisal," Journal of the Air Pollution Control Association, Vol. 33, No. 6, pp. 575-587, June 1983. Dr. Basil Dimitriades, Mr. Bruce W. Gay, Jr., Mr. Robert R. Arnts, and Mr. Robert L. Seila	ESRL/RTP
MONITORING AND MEASUREMENT METHODS	"An Empirical Bayes Method for Comparing Air Quality Standards," Atmospheric Environment, Vol. 17, No. 4, pp. 837-841, 1983. Mr. Jack C. Suggs and Dr. Thomas C. Curran	ERL/Duluth
	"Differentiation of Brominated Biphenyls by Carbons-13 Nuclear Magnetic Resonance and Gas Chromatography/Mass Spectrometry," J. Organic Chemistry, 47, 4032-4037, 1982. Dr. G. Wayne Sovocool and Dr. Nancy K. Wilson	EMSL/RTP
CONTROL TECHNOLOGY	"Testing and Commercialization of Byproduct Dibasic Acids as Buffer Additives for Limestone Flue Gas Desulfurization Systems," APCA Journal, Vol. 33, No. 10, October 1983. Mr. John G. S. Chang and Mr. J. David Mobley	IERL/RTP
HEALTH EFFECTS	"Pulmonary Effects of Ozone Exposure During Exercise: Dose-Response Characteristics," J. Appl. Physiol.: Respirat. Environ. Exercise Physiol., 54 (5): 1345-1352, 1983. Dr. William F. McDonnell, III, Dr. Donald H. Horstman, Dr. Milan J. Nazucha, Dr. Elston Seal, Jr., Dr. Edward D. Haak, Mr. Sa'id Salaam, and Mr. Dennis House	HERL/RTP

## 1984 Scientific and Technological Achievement Awards

Awards Recommended by SAB: Level III Awards (21)

<u>Category</u>	<u>Title and Author(s)</u>	<u>Laboratory</u>
ECOLOGY	"Dose Determinations for Waterborne 2,5,2',5'-[ <sup>14</sup> C]Tetra-chlorobiphenyl and Related Pharmacokinetics in Two Species of Trout ( <u>Salmo gairdneri</u> and <u>Salvelinus fontinalis</u> ): A Mass-Balance Approach," <u>Toxicol. Appl. Pharmacol.</u> , <u>68</u> , 177-187, 1983. Dr. James M. McKim and Ellen M. Heath	ERL/Duluth
	"A Toxicity Test Using Life Stages of <u>Champia parvula</u> (Rhodophyta)," Aquatic Toxicology and Hazardous Assessment: Sixth Symposium, ASTM STP 802, American Society for Testing and Materials, pp. 73-89, 1983. Dr. Richard L. Steele and Dr. Glen B. Thursby	ERL/Narragansett
	"Tidal and Diurnal Spawning Cues in the Atlanta Silverside, <u>Menidia menidia</u> ," Environmental Biology of Fishes, Vol. 8(2):97-104, 1983. Dr. Douglas P. Middaugh and Dr. Toru Takita (possible ineligible author)	ERL/Gulf Breeze
TRANSPORT AND FATE	"Composition of Aerosol Particles Collected at Rural Sites in the Ohio River Valley," Atmospheric Environment, Vol. 17, No. 10, pp. 2031-2044, 1983. Robert W. Shaw, Jr. and Richard J. Paur	ESRL/RTP
	"Experimental and Theoretical Study of the Wake of a Block-Shaped Vehicle in Shear-Free Boundary Flow," Atmospheric Environment, Vol. 16, No. 12, pp. 2821-2836, Dec. 1982. Dr. Robert E. Eskridge and Mr. Roger S. Thompson	ESRL/RTP

## 1984 Scientific and Technological Achievement Awards

Awards Recommended by SAR: Level III Awards (21)  
(Cont'd)

<u>Category</u>	<u>Title and Author(s)</u>	<u>Laboratory</u>
MONITORING AND MEASUREMENT METHODS	"Pulsed Positive Ion Negative Ion Chemical Ionization Mass Spectrometric Applications to Environmental and Hazardous Waste Analysis," Biomedical Mass Spectrometry, 10, 369-376, 1983. Dr. L. D. Betowski, H. M. Webb and Mr. A. D. Sauter	EMSL/Las Vegas
	"Hydrologic Control of Lake Susceptibility to Acidification," Canadian Journal of Fisheries and Aquatic Sciences, Vol. 40(11) pp. 1896-1904, 1983. J. M. Eilers, Dr. Gary F. Glass, K. E. Webster, and J. A. Rogalla	ERL/Duluth
	"Fitting Statistical Distributions to Air Quality Data by the Maximum Likelihood Method," Atmospheric Environment, Vol. 16, No. 5, pp. 1071-1076, 1982. Mr. David M. Holland and Mr. Terence Fitz-Simons	EMSL/RTP
	"Determination of Aldicarb Residues in Water by Combined High Performance Liquid Chromatography/Mass Spectrometry," Bull. Environm. Contam. Toxicol., Vol. 28, 740-747, 1982. Dr. L. H. Wright, Mr. M. D. Jackson, and Dr. R. G. Lewis	EMSL/RTP
	"Integrated Sampling and Analysis Methods for Determining NOx Emissions at Electric Utility Plants," Journal of the Air Pollution Control Association, Vol. 32, 1210-1215, 1982. Mr. John H. Margeson, Dr. William J. Mitchell, Mr. Jack Suggs, and Mr. M. Rodney Midgett	EMSL/RTP
CONTROL TECHNOLOGY	"Engineering Data Analysis," Journal of the Technical Councils of ASCE, Proceedings of the American Society of Civil Engineers, Vol. 108, No. TC2, November 1982. Dr. Albert J. Klee and Mr. Lawrence A. Minton	IERL/CIN
	"Optimizing GAC Systems," Journal of the Environmental Engineering Division, Proceedings of the American Society of Civil Engineers, ASCE, Vol. 109, No. 1, February 1983. Dr. Robert M. Clark	MERL/CIN

## 1984 Scientific and Technological Achievement Awards

Awards Recommended by SAR: Level III Awards (21)  
(Cont'd)

<u>Category</u>	<u>Title and Author(s)</u>	<u>Laboratory</u>
HEALTH EFFECTS	"Pulmonary Function in Normal and Elastase-Treated Hamsters Exposed to a Complex Mixture of Olefin-Ozone-Sulfur Dioxide Reaction Products," Environmental Research, 31:302-310, 1983. Mr. James A. Raub, Dr. Frederick J. Miller, Dr. Judith A. Graham, Dr. Donald E. Gardner, and Dr. John J. O'Neil	HERL/RTP
	"Morphometric, Biochemical and Physiological Assessment of Perinatally Induced Renal Dysfunction," Journal of Toxicology and Environmental Health, 11:1-13, 1983. Dr. Robert J. Kavlock and Ms. Jacqueline A. Gray	HERL/RTP
	"Acute Postnatal Exposure to Triethyltin in the Rat: Effects on Specific Protein Composition of Subcellular Fractions from Developing and Adult Brain," J. Pharmacol Exp. Ther., 224:466-472, 1983. Dr. J. P. O'Callaghan, Dr. Diane B. Miller, and Dr. L. W. Reiter	HERL/RTP
	"Pattern Reversal Visual Evoked Potentials in Awake Rats," Brain Res. Bul., 10:817-823, 1983. Dr. William K. Boyes and Dr. Robert S. Dyer	HERL/RTP
	"The Thermal Response of a Human in the Near-Zone of a Resonant Thin-Wire Antenna," IEEE Transactions on Microwave Theory and Techniques, Vol. MTT-30, 2:177-185, February 1982. Dr. Ronald J. Spiegel	HERL/RTP
	"Reduced Weight in Mice Offspring After In Utero Exposure to 2450 MHz (CW) Microwaves," Bioelectromagnetics, 3:285-291, 1982. Dr. Ezra Berman, Mr. Hershell B. Carter, and Mr. Dennis E. House	HERL/RTP
	"Effects of Ambient Temperature and Exposure to 2450-MHz Microwave Radiation on Evaporative Heat Loss in the Mouse," J. Microwave Power, 17:145-150, 1982. Dr. Christopher J. Gordon	HERL/RTP

1984 Scientific and Technological Achievement Awards

Awards Recommended by SAB: Level III Awards (21)  
(Cont'd)

<u>Category</u>	<u>Title and Author(s)</u>	<u>Laboratory</u>
HEALTH EFFECTS	"Formation of Mutagens Following Chlorination of Humic Acid. A Model for Mutagen Formation During Drinking Water Treatment," Mutation Research, 118, pp. 25-41, 1983 Mr. John R. Meier, Dr. Robert D. Lingg, and Dr. Richard J. Bull	HERL/CIN
	"Role of O <sup>6</sup> -Methylation in the Initiation of Gamma-Glutamyltranspeptidase-Positive Foci," Chemico. Biol. Interaction, Vol. 43, pp. 313-322, 1983. Dr. Michael A. Pereira, Dr. Edith L.- H. C. Lin, and Ms. Sydna L. Herren Freund	HERL/CIN

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## Attachment III

## 1984 Scientific and Technological Achievement Awards

Number of Awards Recommended by SAB (Totals)

Category	No. of Papers Nominated	Awards Recommended			
		Level I	Level II	Level III	Total
Ecology	11	1	2	3	6
Transport and Fate	14	0	2	2	4
Monitoring and Measurement Methods	26	0	2	5	7
Control Technology	9	0	1	2	3
Health Effects	26	1	1	9	11
1984 Totals	86	2	8	21	31

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February 26, 1985

Dr. Bernard Goldstein  
Assistant Administrator for Research & Development  
U.S. Environmental Protection Agency (RD-672)  
401 M Street, S.W.  
Washington, DC 20460

Dear Bernie:

The Scientific and Technical Achievement Awards Subcommittee of the Science Advisory Board met in Washington on January 31 and February 1, 1985. Most of the members of the Subcommittee were able to participate in the deliberations for both days. A total of 86 papers were nominated. This is by far the largest number of papers nominated since the inception of the program in 1979, when 18 papers were nominated. In general, both the number and the quality of the papers submitted were encouraging and were therefore one indication of the effectiveness of the program. However, the Subcommittee noted that the number of papers nominated by the various laboratories appeared to be very uneven. It was not clear whether this was due to a lack of knowledge or interest in the awards program, or due to other factors. One of the primary purposes of the program is to stimulate the publication of quality papers in the peer reviewed literature. It is difficult to judge the effectiveness of the program on that score, since the total output of research papers in the peer reviewed literature by the different laboratories is not known by the Subcommittee. For next year the Subcommittee would like to have that information available.

We suggest that those papers which have received awards should be publicized and made easily available to all EPA scientists in further recognition of achievement and to serve as examples.

When papers are nominated for an award by a laboratory director, the nomination is justified in a covering letter. These justifications can be very useful to the evaluators as long as they remain analytical with respect to scientific merit, impact on EPA's programmatic needs, and long term significance of the scientific or technological achievements reflected in the nominated paper. Some justifications struck the members as overly enthusiastic and promotional.

The Subcommittee also expressed a number of concerns relating to authorship and eligibility requirements. There are many instances where scientists from other agencies are closely

attached to EPA, and are indeed working on EPA research projects. The eligibility of e.g. NOAA employees working with EPA under such conditions should be reconsidered.

Many papers were co-authored by EPA and contract employees. How does one fairly sort out the relative contributions in terms of scientific achievement. In such cases the individual contributions of the coauthors should be documented in the letter of justification.

In the listing of nominated papers which ORD sent to the SAB, the authors were often listed in an order which differed from that in the original publication. This was particularly troublesome when the name of the senior author was changed. EPA should not change the order of authorship from published order.

The Subcommittee is troubled by the nomination of routine investigations, comparison studies, and literature reviews. Though such studies have their own importance, they do not belong into this category. Literature reviews are not deemed worthy of award, no matter how complete the coverage, unless the authors utilized the compiled information to synthesize something new and significant which was not apparent through reading the individual papers in the review.

It needs to be pointed out that many of the papers which were not nominated for an award were nevertheless useful and important papers.

Sincerely,



Rolf Hartung

cc: Dr. T. Yosie  
✓ Dr. E. Linde *R.H.*  
Dr. D. Seba  
SAB Awards Subcommittee  
SAB Executive Committee

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