

# RISK *newsletter*

Published by the SOCIETY for RISK ANALYSIS

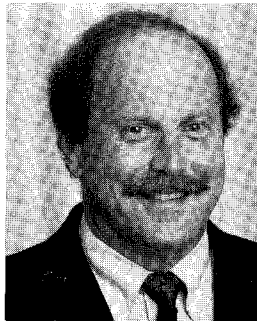
Volume 12, Number 1

First Quarter

## Former SRA Presidents Named Society Fellows



Robert B. Cumming  
1981-1982



Chris Whipple  
1982-1983



Paul Slovic  
1983-1984



Elizabeth Anderson  
1984-1985



Lester B. Lave  
1985-1986



Paul F. Deisler, Jr.  
1986-1987



Vincent T. Covello  
1987-1988



Richard C. Schwing  
1988-1989



B. John Garrick  
1989-1990



Curtis C. Travis  
1990-1991

The first class of Fellows of the Society for Risk Analysis consists of all the Society's former presidents. According to the criteria established by the SRA Council at its December 8 meeting in Baltimore, all future SRA presidents will also be awarded the status of Fellow at the end of their terms.

In addition to the presidents, up to 1% of the Society's membership may be named Fellows providing they meet the requirements set forth by the Council and included in this newsletter (see

Call for Nominations for the Honor of SRA Fellows on page 2). Those selected this year will be honored at the 1992 SRA Annual Meeting in San Diego.

Since its founding in late 1980, the Society has had the following presidents: Robert B. Cumming (1981-82), Chris Whipple (1982-83), Paul Slovic (1983-84), Elizabeth Anderson (1984-85), Lester B. Lave (1985-86), Paul F. Deisler, Jr. (1986-87), Vincent T. Covello (1987-88), Richard C. Schwing

(1988-89), B. John Garrick (1989-90), and Curtis C. Travis (1990-91).

### Robert B. Cumming

Robert B. Cumming, the first president, was also the founding editor-in-chief of the Society's journal, *Risk Analysis: An International Journal*. In addition, he was the founding editor of *RISK newsletter* and worked with an artist at Oak Ridge National Laboratory to develop the SRA logo.

(Continued on page 2.)

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## Call for Nominations for the Honor of SRA Fellows

The SRA Council has established a new award, that of Fellow of the Society for Risk Analysis, to recognize and honor members who have compiled a professional record marked by significant contributions to one or more of the disciplines served by the Society. Such contribution may be evidenced by one or a combination of the following: (a) recognized, original research, application, or invention; (b) technical, scientific, or policy analysis leadership in an enterprise of significant scope that involves risk analysis in a substantial way; (c) superior teaching or contributions to improve education and to promote the use of risk analysis that are widely recognized by peers and students; or (d) service to or constructive activity within the Society of such a quality, nature, and/or duration as to be a visible contributor to the advancement of the Society. The Awards Committee will weigh the total contribution of each nominee in these four areas in arriving at its recommendations to the SRA Council. Nominees must have been members of SRA for at least five years and must now be members in good standing. Only one percent of the Society members per year may be selected. Each past president also will receive recognition as Fellow of SRA.

Nominations are to be made on a standard form by three members of the Society who must be broadly dispersed geographically and of whom, at most, one should normally be from the home institution of the candidate. Forms may be obtained by contacting the office of the Executive Secretary of SRA (see Secretariat's address in the newsletter masthead).

Completed forms should be sent by April 30, 1992, to the chairman, Richard C. Schwing, or a member of the Awards Committee:

Dr. Richard C. Schwing  
Operating Sciences Department  
General Motors Research Laboratories  
30500 Mound Road  
Warren, Michigan 48090-9055  
[Phone 313-986-1348; Fax 313-986-0574]

Dr. Paul F. Deisler, Jr.  
11215 Wilding Lane  
Houston, Texas 77024  
[Phone 713-467-3080]

Dr. Paul Slovic  
1201 Oak Street  
Eugene, Oregon 97401  
[Phone 503-485-2400;  
Fax 503-485-2403]

### Presidents Named Fellows

(Continued from page 1.)

Probably more than anyone else, Cumming recalls the origins of the Society and the travails of getting it started. For him, the term "risk" was associated with carcinogenic and mutagenic risk. Having a PhD in genetics/cytogenetics from the University of Texas, he was working in the Biology Division at Oak Ridge National Laboratory in the areas of genetic toxicology and genetics in mammals. He was particularly interested in the fate and metabolism of environmental mutagens and the molecular dosimetry of chemical mutagens, both leading to an interest in risk assessments of environmentally produced chronic health effects.

As he and other scientists in his field discussed risk, not only in the United States but also in Europe, Canada, and South America, they came to realize that while they initially focused on carcinogenic and mutagenic risk, their conversations inevitably ended up in a much broader context dealing with the nature of risk and strategies for risk management. They also recognized the need for a professional journal dedicated to facilitating communication among risk professionals. Among the group

was Mort Mendelsohn of Lawrence Livermore National Laboratory, who eventually declared it was time to stop talking about a journal and to start one.

During 1980, a steering committee consisting of representatives from government, academia, industry, and the national laboratories met several times at the National Academy of Sciences to discuss the launching of a risk-focused journal. In order to ensure that the journal would be under the control of the scientific community, it became obvious that an international and interdisciplinary society should be formed. The informal steering group then became a formal Steering Group for the Formation of the Society for Risk Analysis.

When the Society was incorporated as a non-profit corporation in Washington, D.C., members of the Steering Committee became interim officers: Cumming as president, Joseph Rodricks of Clement Associates as vice president, and Robert G. Tardiff and Gordon W. Newell of the National Academy of Sciences as secretary and treasurer, respectively.

At the first SRA election in 1981, Cumming was chosen to continue as the first president of the Society. He also served

as the editor of the journal until 1983 and has continued as its senior editor. Still at Oak Ridge National Laboratory, he is engaged in risk analysis of nuclear and other industrial facilities, with a continuing interest in the sociology of risk management, risk perception, and societal response to perceived risks.

### Chris Whipple

While technical manager of the Energy Study Center at the Electric Power Research Institute, Chris Whipple became a charter member of SRA and in 1982 was elected its second president. Interested in energy risks, he had just served as the co-director of the 1981 NATO Advance Study Institute on Technological Risk Assessment held in Sicily and for several years had taught a course for college teachers on cost/benefit analysis.

Whipple has held numerous SRA responsibilities, including serving as chairman of the Society's 1983 Annual Meeting and co-chairman of its 1989 Meeting. He has been a lecturer at SRA's annual risk assessment course since it began in 1986 and serves on the editorial board of the Society's journal. In addition, he has chaired the Committees of Conferences and

Workshops (1981-82), Constitutional Review (1982-83), Nominations (1984-85), and Chapters and Sections (1986-91). He also spearheaded the organization of the Northern California Chapter in 1986 and served as its president in 1988-89. In 1990, he received the Society's Outstanding Service Award.

Whipple is currently vice president and director of the Western Operations of Clement International Corporation, a consulting firm specializing in environmental and health risk analysis. He also chairs the National Academy of Sciences' Board on Radioactive Waste Management, is a member of the NAS Panel on the Waste Isolation Pilot Plant, and serves on the Technical Advisory Committee for UCLA's Risk and Systems Analysis for the Control of Toxics Program. He holds MS and PhD degrees in engineering from the California Institute of Technology.

#### Paul Slovic

Paul Slovic served as SRA's third president from 1983 to 1984. At the time, he was a psychologist at Decision Research, a private research institute which he headed as president since 1986. He became interested in decision making and risk-taking behavior while at the University of Michigan working on his PhD, later concentrating on the judgments and decisions people make in coping with risks in their daily lives, particularly those related to technological hazards.

Long noted for his pioneering work in the study of the perception of risks, Slovic has been a consultant and/or committee member to numerous private and government organizations, including the World Health Organization in Geneva, the Risk Sciences Institute, and the EPA's Science Advisory Board. At the recent 1991 SRA Annual Meeting, he was presented the Society's Distinguished Contribution Award as one who has made significant contributions to risk analysis.

A charter member of SRA, Slovic was elected as a member of the Society's first Council in 1981, serving through 1984. He has also served as chairman of the Committees on Conferences and Workshops (1982-83), Research Support (1984-85), Nominations (1985-86), and Awards (1984-85 and 1986-87). He is currently a member of the 1991-92 Awards Committee. Among his current research interests are examining the perceptions of nuclear power, the dynamics of risk and trust, intuitive toxicology, and the evaluation of damages to the environment.

#### Elizabeth Anderson

Elizabeth Anderson served as SRA's fourth president from 1984 to 1985, remaining on the Council through 1986. Earlier, she had participated on the organizing committee that established the Society and, in 1981, had been elected to a one-year term on the Society's first Council. She had also served as the 1981-82 chairman of the Nominations Committee.

In 1983, Anderson was appointed chairman of the Society's Conferences and Workshops Committee, a position she resumed in 1985 and retained through 1988. In that capacity she initiated SRA's Annual Course on Risk Assessment, a series now in its seventh year. She is a regular lecturer for the course on carcinogen and non-carcinogen risk assessment methods. In 1986-87 she again chaired the Society's Nominations Committee, and in 1987-88 she chaired the Awards Committee.

Anderson has a PhD in organic chemistry from American University. She became interested in risk issues at the U.S. Environmental Protection Agency where she was executive director of the committee that drafted the first risk assessment guidelines for regulating toxic chemicals. Subsequently, she organized and directed the Agency's first carcinogen risk assessment group.

At the time of her election to the SRA presidency, Anderson was still with EPA; however, she left the Agency in 1985 to

become president of ICF-Clement, now Clement International Corporation. Clement is an international environmental and health science firm with a number of multimillion dollar contracts from several government agencies and private organizations.

#### Lester B. Lave

Lester B. Lave, SRA's fifth president, guided the Society during the year 1985-86. Earlier he had been elected to a three-year term on the Council beginning in 1982, during which time he served as chairman of the Special Projects Committee (1982-84), the Public Affairs Committee (1984-85), and the Annual Meeting Committee (1984-85). As the immediate past president, he headed the Publications Committee in 1986-87, subsequently chairing the Nominations and Research Support Committees in 1987-88 and the Awards Committee in 1988-89. He has also been a regular lecturer on risk management in the Society's annual risk assessment course.

While president, Lave promoted establishing additional SRA chapters in the USA and SRA sections in Europe and Japan. SRA-Europe was approved by the Council during his tenure (in 1986). He also concentrated on improving the Society's financial position and increasing communication with members through more regular publication of the newsletter.

*(Continued on page 4.)*

## Call for Nominations for SRA Awards

The SRA Awards Committee invites nominations for two categories of awards presented by the Society. One category is the Outstanding Service Award, which is awarded to SRA members for extraordinary service to the Society that deserves special recognition. The other category is the Distinguished Achievement Award, which is awarded to any person for extraordinary achievement in science or public policy relating to risk analysis.

Please submit the names of your nominees and a brief paragraph supporting each by April 30, 1992, to the chairman, Richard C. Schwing, or a member of the Awards Committee:

Dr. Richard C. Schwing  
Operating Sciences Department  
General Motors Research Laboratories  
30500 Mound Road  
Warren, Michigan 48090-9055  
[Phone 313-986-1348; Fax 313-986-0574]

Dr. Paul F. Deisler, Jr.  
11215 Wilding Lane  
Houston, Texas 77024  
[Phone 713-467-3080]

Dr. Paul Slovic  
1201 Oak Street  
Eugene, Oregon 97401  
[Phone 503-485-2400; Fax 503-485-2403]

## Call for Nominations for SRA Officers

The SRA Nominating Committee solicits nominations for the following offices in the Society's 1992 elections:

President-Elect  
Three Councilors

Councilors will serve three-year terms and may not succeed themselves until one year has elapsed following the completion of their terms.

Please submit your nominations with a brief paragraph supporting each by April 30, 1992 to:

Dr. B. John Garrick  
PLG, Inc.  
4590 MacArthur Blvd., Suite 400  
Newport Beach, California 92660-2027  
[Phone 714-833-2020; FAX 714-833-2085]

## Presidents Named Fellows

(Continued from page 3.)

Underlying all his efforts was his major thesis: SRA must "build a solid case for research to improve risk analysis and management methods."

At the time of his election, Lave was the James H. Higgins Professor of Economics at the Graduate School of Industrial Administration at Carnegie Mellon University. He still holds that position, with appointments also in the Department of Engineering and Public Policy and the School of Urban and Public Affairs. His research in risk analysis and management has focused on air pollution, toxic chemicals, public health, automobile safety, and other issues. He has a PhD from Harvard University and was a senior fellow in the Economics Studies Program at the Brookings Institution from 1979 to 1982.

Paul F. Deisler, Jr.

The Society's sixth president, Paul F. Deisler, Jr., assumed the office in 1986 almost immediately upon retiring from Shell Oil Company, where he was Vice President for Health, Safety and Environment. A chemical engineer (PhD from Princeton University), he had long been active in promoting the safe use of chemicals and was a founding director both of the Chemical Industry Institute of Toxicology formed in 1974 and the American Industrial Health Council formed in 1977.

Deisler's tenure was marked by the Society's first successful meeting away from the East and West Coasts (in his own city of Houston), the adoption of a single clear set of bylaws (two sets had emerged),

the publication of the first membership directory in four years, the provision of financial support for building SRA-Europe, increases in membership and chapters, and further improvement in the Society's financial condition.

In his first SRA appointments, Deisler was chairman of both the Membership Committee and the Annual Meetings Committee (in 1985-86). Later he served as chairman of the Committees on Publications (1987-88), Nominations (1988-89), and Awards (1989-90). Currently, he is a member of the Awards Committee.

Though retired, Deisler remains active in the risk assessment field. He is a member of the EPA's Executive Committee and Research Strategies Advisory Committee, an adjunct professor at the University of Texas School of Public Health, and a private consultant in risk assessment and management.

Vincent T. Covello

Vincent T. Covello was the Society's seventh president, serving during the year 1987-88. A founding member of the Society, he served as a member of the SRA Council from 1981 through 1989. During this period he was chairman of the Committees on Publication (1981-86, 1988-89), Liaison (1985-86), Annual Meetings (1986-87), Nominations (1989-90), and Awards (1990-91). While president, Covello welcomed SRA-Japan as a new section of the Society (in 1988) and promoted formal SRA contacts with numerous other foreign countries.

For his many services to the SRA, Covello received the Society's second Distinguished Service Award in 1986. Cur-

rently, he serves as the Society's historian and is a regular lecturer on risk communication at the annual SRA course on risk assessment.

After serving as director of the Risk Assessment Program at the National Science Foundation for several years, Covello returned to Columbia University, where he had received a PhD in quantitative sociology and social psychology. He accepted appointments as a professor of environmental sciences in the School of Public Health and as director of the University's Center for Risk Communication in New York City.

One of Covello's principal research interests is risk communication, and as a senior scientist of the White House Council on Environmental Quality, he was a major contributor to the Council's 1989 book titled *Risk Analysis: A Guide to Principles and Methods for Analyzing Health and Environmental Risks*.

Richard C. Schwing

Richard C. Schwing, SRA's eighth president, assumed office in 1988 after serving in the president-elect's traditional appointment as chairman of the Annual Meeting Committee (1987-88). Subsequently, he served as chairman of the Committees on Publication (1989-90) and Nominations (1990-91). He is currently chairman of the Awards Committee, which has the responsibility for recommending the first slate of non-president nominees for Fellow, as well as the nominees for Distinguished Achievement Awards and Outstanding Service Awards.

As president of SRA, Schwing announced that the Chevron Corporation and SRA had established a two-year Chevron Postdoctoral Risk Analysis Research Fellowship, which was awarded for the first time at the 1990 SRA Annual Meeting. He also attended SRA-Europe's first conference, held in 1988 in Laxenburg, Austria, and welcomed three new chapters into the Society (bringing the total to 12). Since then, he has helped organized the Michigan Chapter, chairing its first Nominating Committee.

Schwing has a PhD in chemical engineering from the University of Michigan. When elected SRA president, he was a principal research engineer in the Operating Sciences Department of the General Motors Research Laboratories. While still in that position, his research has been refocused from environmental risks to highway risk and accident risks in general. Presently he is involved in a cooperative

project with Yacov Haimes and others at the University of Virginia in structuring and classifying current knowledge on highway accident causation and vehicle crash management.

### B. John Garrick

B. John Garrick, an international authority on quantitative risk analysis and management of large engineered systems, served as SRA's ninth president during the year 1989-90. Prior to that he had been a member of the Council for three years (1986-88) and had chaired the Membership Committee (1986-87) and the Annual Meeting Committee (1988-89). In 1990-91, he was chairman of the Committee on Publications, a position he stills holds. He is also the current chairman of the Committee on Nominations. In 1987, he was a prime mover in the formation of the Society's Southern California Chapter.

Garrick's term as president marked the beginning of organized specialty groups within the Society, which he had originally proposed as divisions and which are now significantly impacting the organization and content of the annual meetings. Garrick feels that such groups allow a focus on particular issues, during which "societal factions that often have opposing views can share and exchange ideas and information." He considers the availability of such

a forum—for finding common ground and acceptable alternatives to solving specific problems—as the single most important role of the Society and the one that it should strive most to preserve.

Garrick has a PhD in engineering and applied science from the University of California, Los Angeles and is president and chairman of PLG, Inc., a firm specializing in risk analysis, risk management, and reliability engineering in the three broad fields of energy (especially nuclear energy), the chemical and petroleum industry, and aerospace. In 1987, PLG, the University of California, Los Angeles, and the Massachusetts Institute of Technology established the B. John Garrick Fellowship in Nuclear Engineering to support graduate students doing probabilistic risk and reliability analysis at MIT and UCLA.

### Curtis C. Travis

Curtis C. Travis, SRA's tenth and immediate past president, has also served the Society in two other (long-term) roles: He has been editor of the SRA journal since 1983 and director of the Society's annual carcinogenic risk assessment course since 1985. As president-elect, he headed the Annual Meeting Committee in 1989-90; and while president, he successfully renegotiated the Society's contract with Plenum Publishing Corporation, increas-

ing the number of journal issues per year from four to six. For his work on the journal, he was presented the Society's first Distinguished Service Award in 1984.

Recognizing that the Society should encourage regular communications with its members, Travis also led the Council in deciding to resume publication of the newsletter four times per year (it had been reduced to three issues per year in 1987) and promoting its use for general risk-related news in addition to Society news. He has stated his belief that the Society should play an integral part in the public debate on issues such as global climate changes, ecological damage, and hazardous wastes.

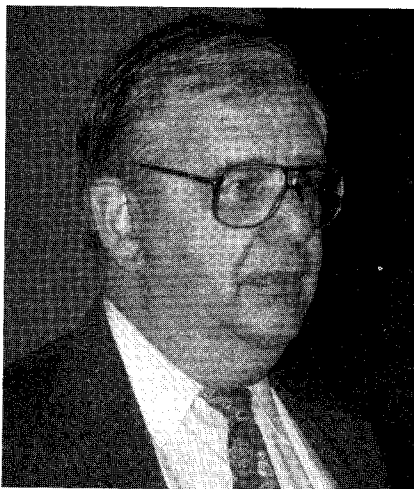
After serving several years as the director of the Office of Risk Analysis in the Health and Safety Research Division of Oak Ridge National Laboratory, Travis was named director of the Center for Risk Management established at ORNL in 1991 by the U.S. Department of Energy. He has a PhD in applied mathematics from the University of California at Davis and has been active in risk assessment since 1976. In recent activities, he has been the technical lead on risk assessment projects for the Office of Science and Technology Policy and the Agency for Toxic Substances and Disease Registry, the latter related to health assessments at Superfund sites.

## Results of 1991 Elections Announced

The results of the 1991 elections of SRA officers were announced at the 1991 Annual Business Meeting in Baltimore. James D. Wilson was chosen as president-elect, and incumbents Vlasta Molak and Raymond F. Boykin were re-elected as secretary and treasurer, respectively. Also elected were three new councilors: Donald G. Barnes, John D. Graham, and Rae Zimmerman.

### Wilson Is President-Elect

SRA President-Elect James D. Wilson is the Regulatory Management Director, Risk Assessment, in the corporate Environmental, Safety, and Health Staff of Monsanto Company in St. Louis, Missouri, where he has been employed for 25 years. Wilson began his career in chemistry, earning a BS from Harvard University and a PhD from the University of Washington. Twenty years ago, he was introduced to risk assessment through his participation in the develop-



James D. (Jim) Wilson

ment of a decisiontree procedure for identifying and prioritizing possible environmental and health risks from industrial processes and products in sparse-data situations. Today, Wilson is recognized as

an expert on science policy issues in risk assessment.

In 1989-90 Wilson took leave from Monsanto to serve as the science policy vice president of the American Industrial Health Council. In that position, he wrote a paper identifying "hazard characterization" as an important part of EPA's risk communication process and organized an effort by industry scientists to describe some of the principles of science-based carcinogen hazard identification. Currently, his work focuses on improving the scientific basis for the health risk assessment process.

Wilson has been an SRA member since 1986 and has contributed several papers to the SRA journal. He was appointed chair of the Liaison Committee for 1986-87 and continued to accept that appointment through 1990-91. In 1988 he was elected to a three-year term on the SRA Council.

(Continued on page 6.)

## Election Results

(Continued from page 5.)

### Molak Re-elected Secretary

Vlasta Molak, elected to a second two-year term as SRA secretary, is the founder and president of Biotechnology Forum, Inc., in Cincinnati, Ohio. She has a BS in physical engineering, an MS in chemistry, and a PhD in biochemistry, with postdoctoral training in molecular genetics. She is a Diplomate of the American Board of Toxicology and a toxic chemicals risk analyst with the National Institute for Occupational Safety and Health. She also chairs the Subcommittee for Technical Interpretation of the Hamilton County (Ohio) Local Emergency Planning Committee and the Environmental Committee of the Cincinnati-Kharkov Sister City Project.

Molak has been an SRA member since 1985. At the 1987 Annual Meeting in Houston, she was appointed the International Coordinator of SRA—a position she still holds—and has actively promoted the organization of SRA sections wherever she has traveled outside the U.S. In 1989 Molak organized the SRA International Communication Network and also was elected to her first term as SRA secretary. She is now coordinating the SRA participation in Global Forum, an event for nongovernmental organizations that will be held concurrently with the Earth Summit (The United Nations Conference on Environment and Development) in Rio de Janeiro in June.

### Boykin Re-elected Treasurer

Raymond F. Boykin, elected to a second two-year term as SRA treasurer, is a professor of management science and the director of the Center for Risk Management at California State University, Chico. Currently a senior associate consultant with PLG, Inc., Boykin has more than 12 years of experience involving risk assessment in the chemical and nuclear industries and has served on several industry and government risk assessment and risk management committees. He has a BA in quantitative methods from California State University, and an MS and a PhD in management science from San Diego University and St. Louis University, respectively.

A charter member of SRA, Boykin was the general program chair and gen-

eral meeting co-chair for the 1984 and 1989 SRA Annual Meetings, respectively. In 1989 he was elected to his first term as treasurer of the Society.

### Three New Councilors

**Donald G. Barnes**, a charter member of SRA, is the staff director of the U.S. Environmental Protection Agency (EPA) Science Advisory Board. Before joining the EPA in 1979, he chaired the Science Division at St. Andrews Presbyterian College in North Carolina. He has a BA in chemistry from the College of Wooster and a PhD in physical chemistry from Florida State University, with graduate training in toxicology, pharmacology, immunology, and epidemiology.

At EPA, Barnes led the staff support that produced *Reducing Risk*, a Science Advisory Board report comparing sources of environmental risk that has led EPA to adopt a risk-based strategy. Under his direction, the Board has examined several risk assessment issues, including the carcinogenicity of environmental tobacco smoke, electromagnetic fields, and substances such as arsenic and styrene; ecological risk assessment concepts; and risk assessment guidelines for developmental toxicity and exposure evaluation, as well as cancer. He serves on the EPA senior risk assessment policy group (the RA Council) and senior risk assessment scientific group (the RA Forum).

Barnes chaired a NATO technical panel which developed a toxicity equivalency factor (TEF) approach that has been adopted by several countries. He represents the EPA on the interagency Agent Orange Working Group and has consulted with the World Health Organization on several risk assessment issues relating to dioxin, an area of risk assessment in which he has been active for more than a decade.

**John D. Graham** is a charter member of SRA and a contributor to the first issue of its journal. He is the founding director of the Harvard Center for Risk Analysis, an associate professor of policy and decision sciences in the Harvard School of Public Health, and director of the Harvard Injury Control Center. He has a BA in economics from Wake Forest University, an MA from Duke University, and a PhD in public policy from Carnegie Mellon University.

Before joining the Harvard faculty, Graham was a post-doctoral fellow at the Harvard School of Public Health, studying the scientific basis of chemical risk assessment. Earlier he had been a senior staff associate to the National Research Council Committee on Risk and Decision Making and a visiting scholar on regulation at the Brookings Institution. He has written (or co-authored) four books and over 30 papers on topics including the carcinogenic risk of chemicals and auto safety. He is on the editorial boards of the SRA journal and the journal *Accident Analysis and Prevention*.

**Rae Zimmerman**, a charter member of SRA, is a professor of planning at New York University's Robert F. Wagner Graduate School of Public Service, where she conducts research and teaches courses in environmental studies, epidemiology, infrastructure, and risk assessment. She initiated and directs the Annual Summer Institute in Risk Management in Environmental Health and Protection, which marks its tenth year in 1992.

Zimmerman has a BA in chemistry from the University of California (Berkeley), a master's degree in city planning from the University of Pennsylvania, and a PhD in planning from Columbia University. She has directed over 20 grants for multidisciplinary research in environmental and hazardous waste management, risk communication, and risk assessment applications to groundwater, coal gas sites, and transportation. She has worked as a senior advisor to engineering firms and government and professional organizations. Her book, *Governmental Management of Chemical Risk*, was published in 1991.

Zimmerman was the Social Sciences Program Coordinator at the SRA 1984 Annual Meeting, and in 1987 she co-founded the SRA Metropolitan Chapter, serving as the chapter's first president.

## Thank You

The Society for Risk Analysis expresses appreciation to Catherine St. Hilaire and Joellen Lewtas, who completed their three-year terms on the Council. Jim Wilson also completed a three-year term but will continue on the Council as president-elect.

## SRA 1992 Annual Meeting Set for December in San Diego

The historic Hotel del Coronado, set on the crystal beach of San Diego, will be the site of the 1992 SRA Annual Meeting on December 6-9, 1992. Meeting plans are being developed by the Technical Program Committee, chaired by Doug Orvis of Accident Prevention Group of San Diego. The general Call for Papers will be announced in April, along with final plans.

Current plans are to hold five to six concurrent platform sessions. Four sessions will be reserved for topics of interest to SRA Specialty Groups. Plans for these sessions are included in the reports from the specialty groups (see pages 14 and 15), and the coordinators are the following:

Engineering and Applications/Space, Hatice Cullingford (713-283-8229)

Ecological Risk/Global Risk, Larry Barnhouse (615-574-7393)/Justin Lancaster (617-496-1457)

Exposure Assessment, Paul Price (207-774-0012)

Risk Communication, Linda-Jo Schierow (202-707-7279).

The other sessions will be dedicated to papers of more general interest, including health risk assessment and social/policy issues.

In addition to the platform sessions, two extensive poster sessions are planned that will run concurrently with the platform sessions and will also be accessible during breaks and exhibitor sessions. Plenary session and luncheon speakers will address issues relating to a general theme for the meeting (to be defined).

Persons who are interested in helping to organize sessions or who have ideas for session topics are invited to contact James Wilson, president-elect and General Chairman (314-694-8879), Douglas Orvis, program chairman (619-592-0189), or one of the organizers listed above.

**Notice:** On March 12-13, President Warner North will be meeting in the Washington, DC area with past SRA presidents and Council members in a strategic planning session for the Society.

## 1991-92 Roster of SRA Officers and Councilors

The names and addresses of the SRA officers and councilors for 1991-92 are as follows:

**President:** D. Warner North, Decision Focus Incorporated, 4984 El Camino Real, Los Altos, California 94022 (Phone 415-960-3923; Fax 415-960-3656).

**President-elect:** James D. Wilson, Monsanto Company, 800 N. Lindbergh Boulevard, St. Louis, Missouri 63167 (Phone 314-694-8879; Fax 314-694-6858).

**Secretary, 1993:** Vlasta Molak, Biotechnology Forum, Inc., 8987 Cotillion Drive, Cincinnati, Ohio 45231 (Phone or Fax 513-521-0506).

**Treasurer, 1993:** Raymond F. Boykin, California State University, Chico, College of Business, Chico, California 95929-0011 (Phone 916-898-5895 or 916-898-6463 [secretary]; Fax 916-898-4584).

**Past President:** Curtis C. Travis, Center for Risk Management, Health and Safety Research Division, Oak Ridge National Laboratory, M/S 6109, 4500S, P.O. Box 2008, Oak Ridge, Tennessee 37831-6109 (Phone 615-576-2107; FTS 626-2107; Fax 615-574-9887).

**Executive Secretary:** Richard J. Burk, Jr., 8000 Westpark Drive, Suite 130, McLean, Virginia 22102 (Phone 703-790-1745; Fax 703-790-9063).

**Councilor, 1994:** Donald G. Barnes, Science Advisory Board (A-101), U.S. Environmental Protection Agency, Washington, D.C. 20406 (Phone 202-260-4126; Fax 202-260-9232).

**Councilor, 1992:** R.A. (Tony) Cox, Four Elements Limited, Greencoat House, Francis Street, London SW1P 1DH, England (Phone 44-071-973-8041; Fax 44-071-973-8042).

**Councilor, 1993:** Ann Fisher, Pennsylvania State University, Department of Agricultural Economics and Rural Sociology, 201 Weaver Building, University Park, Pennsylvania 16802 (Phone 814-865-0469; Fax 814-865-3746).

**Councilor, 1994:** John D. Graham, Harvard School of Public Health, Center for Risk Analysis, 677 Huntington Avenue, Boston, Massachusetts 02115 (Phone 617-432-0804; Fax 617-432-4494).

**Councilor, 1992:** Peter Barton Hutt, Covington & Burling, 1201 Pennsylvania Avenue, N.W., Washington, D.C.

20004 (Phone 202-662-5522; Fax 202-662-6291).

**Councilor, 1993:** Saburo Ikeda, Institute of Socio-Economic Planning, The University of Tsukuba, 1-1-1 Tennoudai, Tsukuba, Ibaraki 305 Japan (Phone 81-0298-53-5380; Fax 81-0298-55-3849).

**Councilor, 1992:** Roger E. Kasperon, Clark University, Center for Technology, Environment, and Development, 950 Main Street, Worcester, Massachusetts 01610 (Phone 508-751-4605; Fax 508-751-4600).

**Councilor, 1993:** David B. McCallum, Columbia University, Center for Risk Communication, 1000 Potomac Avenue, N.W., Washington, D.C. 20007 (Phone 202-338-2156; Fax 202-333-6316).

**Councilor, 1994:** Rae Zimmerman, New York University, Robert F. Wagner Graduate School of Public Service, 4 Washington Square North, New York, New York 10003 (Phone 212-998-7432; Fax 212-995-3890).

**Note:** SRA committee appointments will be announced in the April issue of RISK newsletter.

# Report from 1991 SRA Annual Business Meeting

President Travis opened the Monday evening business meeting by calling on President-elect Warner North, who had served as chairman of the Annual Meetings Committee, to present attendance statistics on the 1991 meeting. North reported that at the end of the first full day of sessions, 580 persons had registered, which was approximately 100 more than had attended any previous SRA annual meeting. He attributed the larger attendance, in part, to the approximately 100 individuals, many from the Washington, D.C. area, who had helped review abstracts, organize sessions, and make other arrangements to ensure the success of the meeting. (Editor's Note: By the end of the meeting, 692 persons had registered.)

North pointed out that once again the meeting organizers were plagued with problems in scheduling over 300 papers and panel discussions within a three-day period, which, in turn, frustrates attendees interested in simultaneous sessions. He feels the Society is limiting itself with its format of as many as 10 concurrent sessions and invited suggestions for alternative formats.

## Report on Elections, Membership

SRA Secretary Vlasta Molak presented the election results (see page 5) and reported that as of December 6, 1991, the Society had 1,858 members. This is to be compared with a 1990 pre-annual meeting total of 1,693. The addition of 165 members is only slightly less than the 10% increase which President Curtis had set as a goal. Molak pointed out that these numbers did not include those individuals who became members through full registration at the 1991 annual meeting.

## Report on Budget

SRA Treasurer Ray Boykin reported that at the end of the year 1990, the Society had a cash balance of about \$80,000. On a cash basis, it barely broke even or maybe even lost a little during 1990, but on an accrual basis it broke even.

SRA also had a cash balance of \$80,000 at the time of the 1991 meeting, again breaking even. In 1991, the Society had cash expenses associated with retiring the last sets of proceedings from previous annual meetings, which totaled about \$20,000. That will not be a recurring expense henceforth.

For 1992, it appears SRA will have revenues of \$258,000 and expenses of approximately \$240,000, for a net income of \$18,000. Boykin pointed out that income from sustaining memberships has been decreasing for the last several years and urged members to encourage their own companies to become sustaining members with contributions of \$500 or more to the Society. Grants to SRA also have been decreasing, and, in particular, a large grant from the Department of Health and Human Services will no longer be forthcoming.

On the plus side, SRA-sponsored workshops have been doing well and publication royalties are increasing. The number of subscriptions by institutions for the SRA journal have increased sufficiently to warrant royalties from Plenum Publishers, and current renegotiations with Plenum for continued publication of the journal are leading to a more favorable position for the Society. A guarantee of \$50,000 per year from the journal is expected.

Boykin reported that the Society would probably have increased expenses for the newsletter during 1992, since it was expected that the SRA Council at its Tuesday evening meeting would approve four issues per year with an improved quality of paper.

With respect to dues, Boykin said the Council would not be authorizing a dues increase for 1992. An increase can be expected in 1993, however, since the journal will then be going from four issues per year to six issues per year (see below). (Note: Currently \$30 of the \$60 for a full membership is passed on to Plenum Publishers to cover a subscription to the journal.)

Boykin concluded by saying that he expected the Society to "start getting real healthy" in 1993, and that Council's hope was to reserve a 10% to 15% excess every year that could be reserved as an endowment for future programs.

## Report on SRA Journal

President Travis, who is also editor of the Society's journal, reiterated that the journal would begin publishing six issues per year in 1993. He had hoped that would occur in 1992, since he has somewhat of a backlog of papers awaiting publication, but it was not possible to get the contract in place in time.

The number of submissions to the journal has been growing, Travis said, and he feels the quality of the papers continues to improve. He thinks that reflects a maturity in the field, with the issues addressed by the authors becoming more focused.

In his report, Travis also applauded the efforts of Lorraine Abbott and her newsletter staff during the year 1991.

## Future Meeting Locations

President-elect North said that the 1992 SRA Annual Meeting will be held in San Diego, California, December 6-10, at the Hotel del Coronado, which has superb and extensive facilities.

The 1993 meeting will be held in Savannah, Georgia, and the 1994 meeting will be back in the Washington, D.C. area. North asked that any local chapters wishing to host a future meeting contact him.

## Distinguished Service Awards

Travis presented the 1991 Distinguished Service Awards to George Apostolakis of the University of California, Los Angeles, and to Ann Fisher of Pennsylvania University. He pointed out that both had made long-term and significant contributions to the Society, Apostolakis in the area of engineering and Fisher in SRA's social science activities, especially risk com-



munication. (Editor's Note: See RISK newsletter, September, 1991 for article on the awardees' contributions.)

*Report From Eastern Europe*

As SRA's international coordinator, Vlasta Molak reported on her recent trip to Eastern Europe (see RISK newsletter, September, 1991) and the interest she found there for organizing sections of the Society for Risk Analysis. A native of Croatia before emigrating to the United States, Molak is anxious that the Society do all it can to help Eastern Europeans attack their massive environmental problems. She pointed out that several visitors from Eastern Europe were present at the annual meeting.

Molak also focused on Latin America, saying that several SRA members will be attending the forthcoming Earth Summit in Rio de Janeiro, Brazil. She has hopes that SRA sections can be formed in Brazil, Argentina, and Mexico. She is also contacting persons in other countries through electronic mail. She requested help from anyone who has an electronic address and is interested in a special SRA activity.

Travis pointed out that SRA has active sections in Europe and Japan for which SRA Councilors R. A. (Tony) Cox and Saburo Ikeda are the respective liaisons.

*Report From Chicago*

President Travis called attention to changes in the Society's bylaws resulting from the Sunday meeting of the 1991 SRA Council. A motion to accept was made from the floor, seconded, and carried without discussion.

*Comments From The Floor*

When Travis asked for any business that should be brought up from the floor, the following topics were mentioned and discussed:

**Membership Directory.** A request was made for addresses of all the attendees. Travis replied that all who registered for the full meeting would automatically become SRA members

and would be included in the next Society directory, which will be issued in the spring. Those who did not register for the full meeting should contact him for a directory.

**Specialty Groups.** An inquiry about the organization and activities of specialty groups prompted a floor-chair discussion in which it was stated that there is no particular process for establishing specialty groups other than for interested parties to approach the Council. One suggestion was that anyone wishing to organize a group focusing on a particular issue (or issues) could ask the newsletter editor to publicize that fact and help that person contact other interested parties.

Travis pointed out that several specialty groups (formerly called special interest groups) formed at the 1990 Annual Meeting had organized a number of the 1991 sessions and this was strongly encouraged by the Council. He felt that the opposition to focused groups that had surfaced at the 1990 meeting seemed to have diffused, and more people seemed to be interested in such groups this year. Jim Wilson said he didn't see that much increased interest in forming new groups but felt that

most of those now active in groups, as well as outside the groups, are "happy where we are."

Further discussion from the floor centered on a proposal that a new specialty group focusing on ecological topics be formed. Interest in such a group had emerged from the several meeting sessions on ecological risks organized by Charles Menzie and Ron Landy, and Warner North pointed out that interchange between the attendees of such sessions is an excellent way to determine whether interest does indeed exist for forming a new group. He urged those interested in organizing specialty sessions for the 1992 meeting to contact Jim Wilson, who is the chairman of the 1992 Annual Meetings Committee. (Editor's Note: See page 14 for reports on specialty groups.)

**K-12 Environmental Education.**

Nancy Winter, an educational consultant from Bedford, MA, asked whether any of the existing specialty groups were interested in environmental education, especially at the K-12 level, in terms of explaining risk assessment. She added that there is a

*(Continued on page 11.)*

**Changes to SRA Bylaws, Effective December 8, 1991**

With the assistance of Councilor Peter Barton Hutt, an attorney, the SRA Council drafted changes to the Society's bylaws, which were unanimously approved at the 1991 SRA Business Meeting. The changes do the following:

1. Reduce the classes of membership to four: active, student, retired, sustaining. The class of honorary was abolished. (Note: Sustaining membership applies to organizations interested in risk analysis.)
2. Empower the Council to select, after considering the recommendations of the Awards Committee, those individuals to receive SRA awards, including a newly established Fellows award. Other awards are Outstanding Service Awards, for extraordinary service to the Society, and Distinguished Achievement Awards (formerly called Distinguished Contribution Awards), for extraordinary achievement in science or public policy relating to risk analysis. Fellows will be selected upon the basis of substantial achievement in science or public policy relating to risk analysis and substantial service to the Society. Fellows shall include all former presidents of the Society and up to one percent of the Society members per year.
3. Specify that members of the Awards Committee shall be selected from among former presidents of the Society.
4. Give every SRA section the right to be represented at Council meetings. Section representatives who are not also elected councilors may participate in Council deliberations but shall not have a vote.
5. Empower the Council to establish specialty groups, some of which were informally organized as special interest groups at the 1991 Annual Meeting.

## ***Comments by Departing President Travis***

Before I relinquish the gavel to Warner, I would like to make a few closing remarks about my perspectives on the Society after having served this past year as its president.

The first thing that's obvious at this meeting is the sense of growth in the Society. As you talk to people, you can feel their general satisfaction with the quality of the meeting sessions and how well the meeting has been organized. A lot of credit is due to Warner's great organizational capabilities, but part of this feeling is also due to growth and maturity in the risk analysis field. Those of us who have been with the Society since its beginning know how much it has changed. We know how the Society struggled to get to a critical mass of interest. Now, I think we have passed the critical mass and the Society is going to grow exponentially—not necessarily in numbers, but in quality, issues, and importance.

One reason for this growth is an increased national attention now given to environmental problems, particularly hazardous waste. As many of you know, hazardous waste appears to be the growth industry of the 1990s. Another reason for growth is the Clean Air Act and its emphasis on risk assessment. There will be a lot of activity associated with the Clean Air Act in the future.

Increased interest by social scientists in risk assessment is also promoting the Society. As editor of the SRA journal, I've seen a tremendous increase in the number of papers submitted in the social sciences area. Social scientists are organizing many of our annual meeting sessions—particularly in the area of risk communication. Much credit for this development goes to Dr. Ann Fisher, who has worked hard over the past few years to ensure quality risk communication sessions.

Another force that is increasing risk assessment's image, prestige and national attention is its increasing use for prioritizing our nation's environmental problems. EPA has been promoting the use of risk assessment for prioritization for a couple of years. But the thing that's really going to make it happen is that Congress is now beginning to realize that the demand for funding to correct our nation's environmental problems will soon outstrip available resources. We don't have enough money, for example, to adequately clean up all the nation's hazardous waste sites, particularly when you throw in sites from the Departments of Defense and Energy. There has to be some prioritizing of our national spending and that's going to grow in importance in the next few years and raise risk assessment to new heights in terms of national awareness.

One of the things that I haven't seen in the risk analysis area, however, is more money for research. There's more money for applied problems, but not for research to aid the development of risk assessment methodologies.

Take cancer risk assessment, for example. It's difficult to believe, with risk assessments being used to make billion dollar decisions, that there isn't a more focused national effort to improve methodologies and reduce uncertainty in risk analysis. Jim Wilson tells me that industry has been pushing for 7 to 9 years for the incorporation of biology into risk assessment. This approach is beginning to be accepted, but mostly it's industry developing the data and methodologies, and then regulatory agencies might look at it and incorporate it. There's no national focused effort to identify and prioritize critical biological and environmental research that would reduce uncertainty and increase the credibility of risk analysis.

I'm hoping that as the Society gains more influence we can change that. Part of the task will be deciding whether proposed research programs are really going to help. Most risk-related research is currently focused on issues that will not reduce uncertainty in risk assessments. That is, when the experiments are finished, they don't change any of our risk numbers. We spend hundreds of millions of dollars on biological research at institutions, such as EPA and NIEHS, but most of their research doesn't affect risk estimates. It's because they don't start with a risk assessment framework, asking what biological data will help change risk estimates and then designing their experiments to get those data.

A perfect example is the national research program on radon. We still don't know if high radon levels in homes lead to large numbers of lung cancers. To date, projections are based on epidemiological data for miners who were concurrently exposed to diesel smoke and particulates. The DOE and EPA both started research programs on radon, but when I ask people involved in the biological research if their results are going to change any risk numbers, almost without exception they answer, "Well no, that's not what we're trying to do."

The reason the EPA and DOE are funding those programs is to find out if radon causes an increased risk of lung cancer, and yet most of the research they're funding has nothing to do with answering that question. There's something wrong with a national research program that has that kind of focus, and I think as a Society we have to work to ensure that at least some significant fraction of the biological research, as well as other kinds of research, is directed towards gathering data that will help us change risk numbers—either up or down—and reduce their uncertainty.

Finally, I want to say that I've enjoyed being president, and I thank you very much for giving me that honor. I'm very proud to be associated with the Society.

—Curtis Travis  
1990-91 President

## Business Meeting

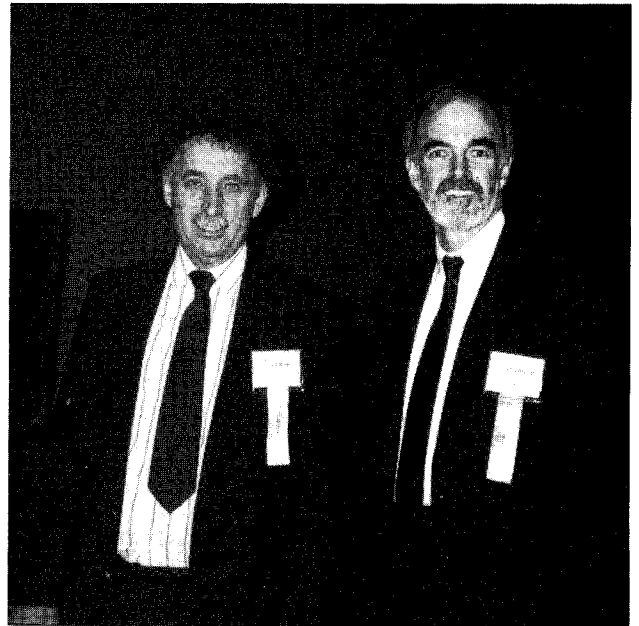
(Continued from page 9.)

great push for environmental education right now and SRA should be involved. The Society could introduce an element of hope by teaching children that we *can* manage risks in our lives and not just limit the education to case study after case study.

Travis responded that he was not aware of any expressed interest within the Society but that his own institution, Oak Ridge National Laboratory, had prepared just such a course for the K-12 level and would soon be introducing it in the Oak Ridge, Tennessee area. He would be interested in helping make the course available at a national level. Society members interested in starting a specialty group in risk education should contact Curtis Travis, Oak Ridge National Laboratory, MS 6109, 4500S, P.O. Box 2008, Oak Ridge, Tennessee 37831 (615-576-2107).

**Annual Meeting Format.** Responding to President-elect North's earlier request for ideas for the format of

(Continued on page 12.)



Curtis Travis and Warner North

## Comments by Incoming President North

I am stepping into some very large shoes following Curtis and my other predecessors as president of the Society. SRA has come a long way, but we still have awesome challenges in front of us. It is my hope that in this next year SRA will continue to make significant contributions, especially in three themes I will briefly describe.

Curtis has already discussed the first one—that is, the need for stimulating the consciousness of those people who control the research purse strings on the potential value of more research effort in our area, risk analysis.

The second theme is being an activist organization. One of the attributes that distinguishes our Society from many others is the willingness of our members to take on real problems and real controversies, as opposed to being academic researchers interested in a particular specialty and interacting only with those who work in the same area. What unites a lot of us is our concern about the way that societies, governments, government agencies, private-sector organizations, and individuals deal with risk and perception about risks. Collectively, we can contribute enormously toward a better understanding of risk and better decision making on risk-related issues.

Third, I would like us as a Society and as individual members to be evangelical. I have found in this last year that I could reach out and suggest to people that maybe they would like to be in our community. I was very pleased that the Department of Agriculture was willing to send some of their top research personnel to contribute to our Annual Meeting. I think that the way for the Society to grow is for SRA members to make connections with others thinking about risks, whether they be federal agencies, professional societies, or various other groups. They can learn from us, and we will learn from them.

In all these efforts, we should be expanding geographically. Vlasta Molak has been very energetic in making contacts with people in Eastern Europe, and we're delighted to have a number of them here at this meeting. We already have very active sections in Japan and in Western Europe. We also have contacts in Latin America. I hope that we can be effective as a world-wide *international* organization in providing a meeting place and leadership on risk issues, which have no defined boundary lines. Many of the types of problems that we are concerned with—maybe even all of them—are problems all over the world. Let us provide help based on our experience, and let us take advantage of the opportunities to work with colleagues in other countries.

I offer these thoughts as we enter our new year. I look forward to working with Jim Wilson on the 1992 Annual Meeting in San Diego, and I am most appreciative of all the help on this year's annual meeting. I am also deeply grateful for the opportunity to hold this office, and I look forward to a lot of additional help from SRA's members in the coming year.

—Warner North  
1991-1992 President

## Business Meeting

(Continued from page 11.)

future SRA meetings, someone from the floor suggested the use of poster sessions. Travis said the Council had already suggested to Jim Wilson that next year's Program Committee consider at least a half day of nothing but poster sessions—that is, no competing meeting sessions should be scheduled. Also, the Council was considering giving presenters the option of being in a poster session or giving an oral presentation.

Travis pointed out the Society doesn't have a history of using posters and that some institutions might have reservations about funding poster presentations as opposed to oral presentations. Still, some societies have very successful poster presentations and the Council is inclined to try it.

**Scheduling of Annual Meetings.** Responding to a question about the selection of the dates and places for the annual meeting, Travis explained that the date was moved from October to December to reduce the probability that the meeting would coincide with a federal budget squeeze and result in last-minute cancellations, as it did last year. As to the place, the plan is to have a meeting in the Washington, D.C. area every second or third year.

Answering a question about when the annual meeting would be held outside the United States, Travis said there would have to be a widespread consensus among the membership for that to happen.

**Local Section Awards.** Larry Froebe, International Technology Corporation, suggested it would be in the

Society's interest to perpetuate the SRA logo through the use of plaques, podium seals, and banners. If the Society had a standard award design, for example, local sections could buy them and have them engraved for presentation to members who have made notable contributions to the section.

## Thanking a Guest

The business concluded, Travis lauded the Society for its progress, at the same time pointing out specific shortcomings and challenging the membership to correct them (see page 10). He then presented the SRA gavel to President Warner North, telling him that he was going to enjoy his presidency more than he had his vice-presidency, with all its attendant responsibilities for the annual meeting.

North, in turn, presented Travis a plaque recognizing his services to the Society. He commended him for his dual efforts as president and journal editor, as well as his contributions in the renegotiation of the contract for the journal publication. He then concluded the meeting with remarks on his vision for the Society during the coming year (see page 11).

### 1991 SRA Sustaining Members

The Society for Risk Analysis acknowledges the following corporations which supported the Society as sustaining members in 1991:

Chevron Corporation  
Dames and Moore  
Dow Chemical Company

## NSF Reorganization Update: Status of DRMS Program

The National Science Foundation is currently undergoing a reorganization that has placed the Division of Social and Economic Sciences, of which the Decision, Risk and Management Science (DRMS) program is a part, under a new Directorate for the Social, Behavioral, and Economic Science (SBE). The division had been under the Directorate for Biological, Behavioral and Social Sciences, which was divided into two directorates in the reorganization.

It is not yet clear how, or even if, the divisions and programs within the SBE Directorate itself will be reorganized; however, probably little will happen before the arrival in Washington of the new Assistant Director for Social, Behavioral, and Economic Sciences in May. Dr. Cora Marrett, whose appointment to that position was an-

nounced by NSF Director Walter Massey on January 31, is currently a professor of sociology at the University of Wisconsin at Madison.

The NSF's Division of Social and Economic Science supports basic research in many fields. The goal of the division is to develop basic scientific knowledge on human social behavior, interaction, and decision making, as well as on social and economic systems, organizations, and institutions. It also supports research on human dimensions of global environmental change and research to improve the quality and the accessibility of social and economic data resources.

Persons wishing to submit proposals to DRMS should continue following the policies of the past since the program level resources and program

directors are still in place, and proposals go to programs rather than to divisions.

The current DRMS program directors are N. John Castellan, Jr., who took leave from Indiana University to join the program last July, and Robin Cantor, who took leave from Oak Ridge National Laboratory to join the program in January. Castellan can be reached by phone at 202-357-7569 and through electronic mail by [JCASTELL@NSF.GOV](mailto:JCASTELL@NSF.GOV); Cantor can be reached at 202-357-7417 and through [RCANTOR@NSF.GOV](mailto:RCANTOR@NSF.GOV).

Requests for information concerning DRMS guidelines and programs should be mailed to: National Science Foundation, DRMS/SES, 1800 G. Street, NW, Room 336, Washington, D.C., 20550.

# EPA's Scientific Reassessment of Dioxin

[Editor's Note: Thanks to William H. Farland and Linda Tuxen of the Office of Health and Environmental Assessment, Office of Research and Development, U.S. Environmental Protection Agency (EPA), for providing the information in the following article.]

In April 1991, EPA Administrator William K. Reilly announced that because of scientific advances in the understanding of the risks of dioxin, EPA would begin a reevaluation of the risks of exposure to the compound. However, until the reassessment was completed, he said, the Agency's various dioxin programs would continue as planned. In November 1991, EPA held a public meeting to report the current status of the reassessment program and to receive comments from the public (*Federal Register* 56, No. 196, page 10903, October 9, 1991).

At the November meeting, F. Henry Habicht II, EPA Deputy Administrator, and Erich Bretthauer, Assistant Administrator for Research and Development, and several EPA scientists stressed a strong commitment to keep the entire reassessment process open, involving national and international scientific communities interested in the topic and providing regular status reports on the effort. However, until all the reassessment activities are completed, EPA cannot speculate on the degree and direction of any changes in the estimation of risks related to environmental exposures.

The Scientific Reassessment of Dioxin program consists of the following five basic activities:

(1) *Develop a biologically based dose-response model.* A "draft" dose-response model based on current knowledge about the biochemical events thought to be necessary for the toxicity of dioxin will be developed. Dose-response data from various biological responses and health effects will be collected and plotted and the consistency of the slope and shape of the curve to the current hypotheses regarding the relationship of early stage to later stage events in the development of a toxicologic response will be analyzed. To develop this "strawman" model, the EPA, the National

Institute for Environmental Health Sciences (NIEHS), and the Robert Wood Johnson Medical School at Rutgers University will conduct a cooperative effort that will include extensive consultation with outside experts. The draft model will ultimately be part of a narrative chapter in the final assessment document, following a limited review by EPA and outside experts in mid-1992 and further review by the Science Advisory Board (SAB) in late 1992.

(2) *Update EPA's health assessment document.* A 1985 EPA-prepared assessment of the human health risks associated with environmental exposures to dioxin reports that although the carcinogenicity of dioxin in humans had not been proven, sufficient evidence of carcinogenicity in animals existed for dioxin to be classified as probably carcinogenic in humans under EPA's Cancer Risk Assessment Guidelines. A 1988 draft assessment suggested that new scientific information on 2,3,7,8-tetrachlorodibenzo-*p*-dioxin (TCDD) may lead to a revised cancer potency estimate. EPA is currently updating the health assessment document to include later epidemiologic studies and studies on the mechanisms of action. The updated assessment will include a chapter on risk characterization and will include applications of the dose-response model. It will also include state-of-the-science chapters on: disposition and pharmacokinetics; mechanisms of toxic actions; toxicology (acute, subchronic, chronic); toxicology (immunotoxic effects); toxicology (reproductive/developmental effects); carcinogenicity; and toxicology (epidemiology/human data). Peer review of the draft document will begin in mid-1992, with SAB review conducted in late 1992.

(3) *Carry out laboratory research in support of dose-response model.* EPA's Health Effects Research Laboratory (HERL) in Research Triangle Park, North Carolina, will direct several research projects to: identify the most sensitive biological responses with adverse effects that can be measured routinely; identify the shape of the low dose region of the respective dose-response curves; and measure toxic equivalents for "dioxin-like" compounds in the general population. The projects include: rodent studies to investigate sensitive indicators of response and the relationship between immune effects and the mechanism of dioxin toxicity; determination of the *in vivo* toxicity equivalence factor (TEF) to dioxin for three coplanar polychlorinated biphenyls (PCBs) and six mono-ortho coplanar PCBs using a repeated exposure paradigm to account for pharmacokinetic issues; measurements

of dioxin, furan, and certain PCB congeners in human serum samples; and determination of where background exposures would place humans on the dose-response curve for sensitive indicators of dioxin exposure such as enzyme induction. These studies are scheduled for completion in 1992.

(4) *Update EPA's exposure assessment document.* The draft of the 1988 dioxin exposure document will be updated by EPA's Exposure Assessment Group and will include comments from SAB's review of that document. The scope of the document will be expanded to include dioxin-like compounds and will address potential exposure pathways such as dust and vapor inhalation, soil dermal contact and ingestion, and food and water ingestion. The document will also include new information on persistence, volatility, and bioaccumulation and expanded exposure scenarios involving environmental fate and potential exposure pathways. Peer review of the draft document will begin in mid-1992, with SAB review conducted in late 1992.

(5) *Characterize ecological risks in aquatic ecosystems.* EPA's Environmental Research Laboratory in Duluth, Minnesota, will conduct studies to characterize ecological risks in aquatic ecosystems from exposure to dioxins, focusing on the study of organisms in aquatic food webs and synthesizing the results with existing aquatic exposure information. Specifically, the studies are: full reproductive cycle exposures of three fish species to determine exposure thresholds of reproductive impairment; investigation of enzyme induction and gonadotropin hormone production in one species of fish to establish most sensitive response indicators; investigation of dioxin toxicity in two species of aquatic invertebrates and one species of amphibian to determine if they are more or less sensitive than fish; and determination of TEFs for polychlorinated dibenzo-*p*-dioxins (PCDDs), polychlorinated dibenzofurans (PCDFs), and three coplanar PCBs, based on reproductive impairment for at least one fish species. The toxicity studies are scheduled for completion in June 1993, with the TEF studies and the ecological risk characterization report to be completed nine months later. Both the study results and the risk characterization will undergo peer and SAB review.

**Note:** For further information on this EPA activity, contact Dr. William H. Farland, Director, Office of Health and Environmental Assessment (RD-689), 401 M Street, SW, Washington, DC 20460 (Phone 202-260-5949; Fax 202-260-0393.)

# Reports from SRA Specialty Groups

*(Editor's Note: At the 1991 SRA Annual Meeting, the Council renamed the Society's Special Interest Groups as Specialty Groups.)*

Following eight well-attended sessions on ecological risk assessments at the 1991 SRA Annual Meeting, a group of over 40 attendees met to form an SRA specialty group on Ecological Risk Assessment. The objectives of the new group are to promote: communication between scientists performing ecological risk assessments; communication between ecological risk assessors and other risk assessment professionals; advances in the scientific foundation of ecological risk assessment; and scientifically sound integration of ecological considerations into environmental risk management.

The group, chaired by Larry Barnthouse of Oak Ridge National Laboratory, will be active in organizing sessions for the 1992 Annual Meeting in San Diego. The group also intends to develop an informal network of members interested in ecological risk assessment. Anyone wanting to be included should send name, address, phone/fax numbers, and electronic mail address to: Dr. L.W. Barnthouse, Environmental Sciences Division, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, Tennessee 37830-6036 (Phone 615-574-7393; Fax 615-576-8543).

Approximately 20 people attended a meeting of the Exposure Assessment Specialty Group (EASG) at the 1991 SRA Annual Meeting to discuss the activities of the group during the past year, activities for 1992, and the group's organization.

In February of 1991, Barbara Peterson, Technical Assessment Systems, Inc., and Paul Price, ChemRisk, sent out a mailing to key people in the field of exposure assessment, encouraging the submission of papers on exposure topics for the 1991 Annual Meeting. They then organized the 50 papers submitted for the meeting into 13 exposure assessment sessions. Peterson also organized and presented a dietary exposure workshop, which was among four workshops offered on the opening day of the 1991 Annual Meeting. During the year, Price and Tom McKone, Lawrence Livermore National Laboratory, were established as liaisons with the International Society for Exposure Analysis (ISEA).

EASG decided that its primary activity in 1991-92 will be to support exposure assessment as a topic at the 1992 Annual Meeting in San Diego by organizing sessions of invited papers on exposure topics and developing a workshop on indoor air/consumer product exposure issues. Suggested topics to be addressed at the annual meeting include the use of Monte Carlo models in exposure assessment; dermal

exposure; characterization of sources of exposure for ubiquitous compounds such as lead, chloroform, trichloroethylene, and benzene; U.S. EPA guidance on exposure assessment; exposure assessment activities under California State regulations; state clean-up levels for toxic materials; and exposure assessment at hazardous waste sites. The group also strongly endorsed the concept of involving ISEA in the planning of possible activities at the 1992 Annual Meeting.

A second and longer term project for EASG was suggested by Bert Hakkinen of the Proctor and Gamble Company: to develop a "reference house" document, which would be initiated at the proposed annual meeting workshop on indoor air/consumer exposure [see box on page 15].

It was decided that no additional organizational structure would be established for EASG in 1991-92. The group will continue to be chaired by Paul Price and directed by a steering committee of Price, McKone, Peterson, Cathy St. Hilaire of Hershey Company, and Alan Stern of Research and Development at Proctor and Gamble. Individuals who are interested in the activities of EASG should contact: Mr. Paul Price, ChemRisk, 1685 Congress Street, Portland, Maine 04102 (Phone 207-774-0012; Fax 207-774-8263).

## **SRA Risk Communication Specialty Group Draft Statement of Purpose**

The Risk Communication Specialty Group has been formed within the Society for Risk Analysis for the purpose of improving risk information communication within and among the general public, special interest groups, industry, government, and academia. The group will pursue this purpose through efforts to:

(1) Promote and facilitate increased contact between individuals trained in risk communication and those trained in technical risk analysis;

(2) Encourage and facilitate collaborative research efforts among risk communication scholars and between risk communication scholars and those skilled in technical risk analysis;

(3) Compile and maintain a directory of risk communication researchers and their areas of expertise for SRA members and others to use when seeking research partners or advice on improving the communication of risk analyses; and

(4) Organize panels on risk communication research and practice for national and regional meetings of the Society for Risk Analysis.

**Note:** Comments on this draft should be sent to: Dr. Richard C. Rich, Center for Environmental and Hazardous Materials Studies, 201A Architecture Annex, VPI&SU, Blacksburg, Virginia 24061-0113 (Phone 703-231-7508; Fax 703-231-3367).

Nearly 70 people from diverse fields attended the Risk Communication Specialty Group (RCSG) meeting on December 10 during the 1991 SRA Annual Meeting.

At the meeting, RCSG created specific goals, established committees, and identified volunteers. Ann Fisher will serve a second year (1991-92) as the group coordinator. Richard Rich of Virginia Polytechnic Institute and State University has drafted the group's charter [see left]. Rose Pfund of the University of Hawaii (Phone 808-956-7031) has compiled the first directory of RCSG members. [Copies of the directory are available from the SRA Secretariat (Phone 703-790-1745).] Lynn Luderer of the U.S. Environmental Protection Agency Risk Communication Program (Phone 202-260-6995) is leading the establishment of a long-term research agenda. Judy Yager of the Center for Environmental Information (Phone 716-271-3550) is identifying possible collaborations. Bill Mitchell of Alliance Technologies Corporation (Phone 919-493-2471) is in charge

of liaison with SRA and other groups. Ortwin Renn of the Clark University Environment, Technology, and Society Program (Phone 508-751-4310) is working on evaluation approaches. Linda-Jo Schierow of Congressional Research Service, The Library of Congress (Phone 202-707-7279), is organizing the risk communication sessions for the 1992 SRA Annual Meeting. George Carlo of the Health and Environmental Sciences Group Ltd. (Phone 202-289-6800) is heading up communication.

RCSG will promote information exchange through written forums and annual meetings. The forums will serve as a network for sharing how risk communication is integrated into the areas of risk assessment and risk management and will afford risk communicators the opportunity to study case histories and discuss theory and trends applicable to the field.

For further information, please contact Dr. Ann Fisher, Department of Agricultural Economics and Rural Sociology, The Pennsylvania State University, 201 Weaver Building, University Park, Pennsylvania 16802 (Phone 814-865-0469; Fax 814-865-3746).

*Global Risk Analysis Group Meeting Plans*

Justin Lancaster, Research Fellow in the Interdisciplinary Programs in Health at the Harvard University School of Public Health, is the new chairman of the Global Risk Analysis Specialty Group. He succeeds Rob Coppock, National Academy of Sciences, who chaired the group during 1989-91 and organized several global risk sessions at the 1990 and 1991 Annual Meetings. Lancaster has spent a decade working in global environmental change from the multiple aspects of science, policy, and law.

The Global Risk Analysis Specialty Group will organize sessions for the 1992 SRA Annual Meeting Program that focus on integrated assessment, combining societal and environmental factors such as demographics, energy, water resources, storm impacts, disease vectors, and land use.

For further information on the group's plans, contact Dr. Justin Lancaster, Harvard University School of Public Health, Pierce Hall 117, Cambridge, Massachusetts 02138 (Phone 617-496-1457).

*Space Specialty Group Plans for 1992*

Following a successful session on space issues at the 1991 SRA Annual

## Development of Reference House for Residential Exposures

A major project under consideration in the Exposure Assessment Specialty Group is to produce a state-of-the-art reference book on consumer and indoor exposure information to facilitate human exposure assessments of (1) the occupants of a residence (i.e., a house or apartment), and (2) humans working (e.g., gardening) and playing near a residence. The document, tentatively titled *Reference House*, would serve as a one-volume source of a wide range of exposure-related information on U.S. homes in the same way that *Reference Man*\* serves as a source for human physiological data. The information for the book would be drawn from publications of the U.S. Census, Housing and Urban Development, and U.S. Environmental Protection Agency and other published technical sources, a goal being to note the existence of (and build on) useful compilations of data, including U.S. EPA's Exposure Factors Handbook and Risk Assistant Software. A suggested outline of topics follows:

*Section 1. Introduction and Mission Statement.*

*Section 2. Residence Parameters.* This section will cover types of residences (overview); residence and room volumes; air changeovers per hour; other factors (impact of opening windows and doors, use of ventilation fans and air purifiers, etc.); and methods of gathering and verifying additional data.

*Section 3. Human Parameters.* This section will cover types of occupants (overview); body weights; body surface areas; breathing data (volumes of air inhaled per minute under different conditions); food consumption; water and other beverage consumption; other uses of water; activity patterns (i.e., time spent in or around residence doing various tasks or sleeping); other habits and practices data; residence times (i.e., years

spent in a particular residence); and methods of gathering and verifying additional data.

*Section 4. Examples of Exposure Assessments.* This section will give various examples involving skin, oral, and inhalation exposure in and around a residence (including multiple routes when appropriate) and examples of uncertainty analyses and Monte Carlo simulations.

*Section 5. Research Needs.* This section will discuss the data gaps and weaknesses; that is, how can uncertainties be reduced?

A proposed schedule for the development of the book begins in 1992 at an SRA Annual Meeting Workshop on Indoor Air/Consumer Product and Exposure. A consensus on the organization and contents of the book would be obtained, the assembling of information would begin, and volunteers to work on various sections would be recruited. In 1993, work on sections of the document would continue and the first peer review of the sections would be held. In 1994, there would be a thorough peer review of the document, and it would be revised and published in 1995. The work during 1993-95 might be condensed into two years, depending on the efforts of the volunteers. Yearly progress reports would be made at SRA annual meetings and in RISK newsletter.

Anyone interested in working on this project should contact Dr. Bert Hakkinen, Proctor and Gamble Company (Phone 513-627-1521; Fax 513-627-2292).

*\*Report of the Task Group on Reference Man: A Report Prepared by Task Group of Committee 2 of the International Commission on Radiological Protection, W. S. Snyder, Chairman, London/New York, Pergamon Press, 1975, 480 pages, ICRP Publication 023.*

Meeting, the Space Specialty Group will sponsor two space-oriented sessions for the 1992 Meeting.

With several high-level government reviews completed last year, the year 1992 is expected to be a transition year for future space activities. Among other projects, several new robotics projects are expected to be specified in support of a development

program for human missions to the moon and Mars.

Anyone interested in risk-based approaches to space activities and/or contributing to the planning of annual meeting sessions should contact Dr. Hatice Cullingford, Exploration Programs Office, NASA Johnson Space Center, Mail Code XE, Houston, Texas 77058 (Phone 713-283-8229; Fax 713-283-5818).

## Chapter News

Nine chapters were represented at the annual Chapter Breakfast held during the 1991 SRA Annual Meeting. Cathy St. Hilaire, chair of the Chapter Liaison and Relations Committee, led a discussion of topics of interest to chapters. All chapters were encouraged to continue submitting chapter news to the newsletter to ensure networking activities.

### East Tennessee Chapter

Jan Borkowski of HAZRAP at Martin Marietta Energy Systems, 1991-92 president of the East Tennessee Chapter, reports that their first 1992 meeting will feature a discussion on the new U.S. Environmental Protection Agency document "Part B: Risk Assessment Guidance for Superfund Sites."

The Chapter is also cosponsoring with the area chapter of the Health Physics Society a session at the Nineteenth Annual WATTEC Technical Conference and Exhibition, February 13-21 in Knoxville, Tennessee.

For more information about the chapter, contact Jan Borkowski, Martin Marietta Energy Systems, HAZRAP, P.O. Box 2003, MS 7606, Oak Ridge, Tennessee 37831-7606 (Phone 615-435-3232; Fax 615-435-3269).

### New England Chapter

Harlee Strauss of H. Strauss Associates, Inc., president of New England Chapter, reports the chapter is initiating a chapter newsletter in conjunction with the Boston Risk Assessment Group (B-RAG). The chapter has been coordinating its activities with B-RAG since 1989.

For the January meeting, Charlie Menzie of Menzie-Cura Associates, the chapter's president-elect, organized two six-member panels that discussed "What Is the Role of Risk Assessment in Site Management? Does It Make a Difference?" and "How Can Risk Assessment Be Better Integrated Into the Site Assessment Process?" Over 100 people attended the event.

On the afternoon of February 26, Robert Bowen, University of Massachusetts-Boston, will speak on "Seafood Safety," and Mike Connor, Massachusetts Water Resources Authority (MWRA), will talk about the controversial new wastewater outfall into the Massachusetts Bay that the MWRA is building as part of its massive sewage system upgrade.

On March 25, John Graham of Harvard University, who is a new SRA Councilor,

will speak on "Legislating Acceptable Cancer Risks from Exposure to Toxic Chemicals"; and Alan Ganser of Ganser Associates will present "Evidence that Neurotoxic Substances Play a Role in Common Neurological and Mental Disorders." On April 22, Margaret Round of NESCAUM will speak on "The Effects of Incorporating Hazard Ranking Methodologies into Title III of the Clean Air Act Amendments"; and Alison Taylor, Harvard University, will address "The Value of Animal Test Information (Acute Bioassays) in the Context of Environmental Control Decisions."

To be placed on the chapter's mailing list, call Margaret Round (Phone: 617-367-8540). Other questions about the chapter should be directed to the chapter contact (see box).

### Northern California Chapter

The Winter Meeting of the Northern California Chapter (NCC) focused on the newly formed California Environmental Protection Agency (Cal-EPA). Steven Book, Interim Director of the Office of Environmental Health Hazard Assessment at Cal-EPA, spoke on "Future Environmental Health Priorities in California." He told how Cal-EPA will consolidate and integrate risk assessment and risk management activities from the various organizations that have been merged to form it.

Also, Jeff Daniels, Tom McKone, and Lauren Zeise were named to the Chapter's nominations committee, and D. Warner North, SRA president and a former president of NCC, discussed how the chapter could get involved in preparations for the 1992 SRA Annual Meeting in San Diego.

NCC President Allan Smith, University of California, Berkeley (UCB), is again organizing a risk assessment course that will consist of a series of seminars by UCB faculty and outside experts. This year the course focuses on arsenic as a case study for risk analysis. The course begins on January 29, continues on alternate Wednesdays through April 29, and is open to members of NCC.

### Research Triangle Chapter

The Research Triangle Chapter's Fourth Annual Fall Workshop in October 1991 attracted 80 participants. Co-sponsored by the University of North Carolina (UNC) School of Public Health and the Cary office of Midwest Research Institute, the workshop focused on the four most important ecological problem areas identi-

fied in the U.S. Environmental Protection Agency's (U.S. EPA's) Science Advisory Board report, *Reducing Risk*: global climate change, stratospheric ozone depletion, habitat alteration and destruction, and species extinction. An audio recording of the workshop is available. Contact: Bill Mitchell, Alliance Technologies Corp., 6320 Quadrangle Drive, Suite 100, Chapel Hill, North Carolina 27514 (Phone 919-493-2471).

The chapter's executive council is considering the topic "Risk Management Approaches" for the 1992 fall workshop. Volunteers to help develop the program should contact the chapter program chair: Julia Kimbell, Chemical Industry Institute of Toxicology, P.O. Box 12137, Research Triangle Park, North Carolina 27709 (Phone 919-541-2070, ext. 364).

The January chapter meeting featured Rory Conolly of CIIT, who spoke on "Cancer and Noncancer Risk Assessment—Not so different if we consider mechanisms: Formaldehyde and Chloroform." In February, Linda Birnbaum of the U.S. EPA Environmental Toxicology Division Health Effects Research Laboratory will present "Update: EPA's Reassessment of Dioxin Risk."

The 1991-92 chapter officers are: President, Josephine Mauskopf, Research Triangle Institute; President-elect, Julia Kimbell, CIIT; Secretary, Robert Hetes, Research Triangle Institute; Treasurer, James White, U.S. EPA Indoor Air Branch; and Councilors William Mitchell, Alliance Technologies, Corp., Annie Jarabek, U.S. EPA Environmental Criteria and Assessment Office, and Deborah Amaral, UNC School of Public Health.

### Southern California Chapter

The Fifth Annual Southern California Chapter (SCC) Workshop will be on March 31 at the Grace Ford Salvatori Building on the campus of the University of Southern California, Los Angeles. The workshop theme is "Project Safety Enhancement - Applications of Risk Analysis." A proceedings will be published by the chapter. For registration information, contact Robert J. Mulvihill, PRC Inc. (Phone 310-640-1050; Fax 310-640-2207).

The 1992 officers of SCC are: President, Robert J. Mulvihill, PRC Inc.; President-elect, Mardy Kazarians, A.D. Little, Inc.; Secretary, Doug Orvis, Accident Prevention Group; Treasurer, Andy Dykes, PLG, Inc.; Past President, Michael Stamatelatos, Scientech, Inc.; and Council-



ors George Apostolakis, University of California, Los Angeles, Terry Fogle, TRW, Inc., Sergio Guarro, Aerospace Corp., Vincent Ho and Stan Kaplan, PLG, Inc., Najmedin Meshkati, University of Southern California, Krishna Nand, ENGR-Science, and Sank Sankaran, Unocal Corporation.

### Philadelphia Chapter

The topic of the January 29 dinner meeting of the Philadelphia Chapter, "Process Risk Management Issues," was expected to draw new participants from the engineering disciplines who may not have recognized the scope of issues pertinent to the field of risk assessment. Joseph Sweeney of ARCO Chemical Company spoke regarding new risk analysis techniques which are available to support the evaluation of process hazards. In April the chapter will nominate officers for 1992-93 and hear Carol Cunningham of ERM, Inc., speak on product life cycle analyses.

### Columbia-Cascades Chapter

The program at the January meeting of Columbia-Cascades Chapter, held on the University of Washington campus in Seattle, was presented by Bryan Gore of the Nuclear Systems and Concepts Department at Battelle Pacific Northwest Laboratory. Gore is a member of the American Society of Mechanical Engineers (ASME) Research Task Force that for several years has been considering modifying the inspection guidelines of the ASME Boiler and Pressure Vessel Code on the basis of risk analysis techniques. The code includes the piping and pressure vessels used in nuclear power plants. Gore described the progress and current status of the project.

### Ohio Chapter

The fall 1991 meeting of the Ohio Chapter included presentations by Vlasta Molak, SRA secretary and president of Biotechnology Forum, Inc., and Sam Shafer, Associate Director and Manager of Cost Engineering for the Proctor and Gamble Company. It also included a short business session, in which Ron Marnicio, the 1991 chapter president, announced that the chapter had become a not-for-profit corporation in Ohio. Molak spoke about her recent trip to Eastern Europe and the shortcomings of the SARA 313-R reporting requirements and threshold reporting values, proposing a risk-based rather than an emissions mass-based reporting scheme. Shafer focused on risk analysis for capital investments in new manufacturing facilities.

Following a successful RiskWare '91, the chapter plans to assist in organizing RiskWare '92 for the 1992 SRA Annual Meeting.

The 1992 officers of the Ohio Chapter are: President, P.J. (Bert) Hakkinen, The Proctor and Gamble Company, Miami Valley Labs, Paper Technology Division, P.O. Box 398707, Cincinnati, Ohio 45239-8707 (Phone 513-627-1521, Fax 513-627-2292); President-elect, Michael L. Dourson, U.S. EPA Environmental Criteria and Assessment Office; Secretary, Hallie J. Serazin, Ohio Environmental Protection Agency, Department of Emergency and Remedial Response, P.O. Box 1049, Columbus, Ohio 43266-0149 (Phone 614-644-2924; Fax 614-644-3250); Treasurer, Steven D. Lutkenhoff, U.S. EPA Environmental Criteria and Assessment Office; and Councilors Ronald J. Marnicio, Ebasco Environmental, Richard C. Hertzberg, U.S. EPA Environmental Criteria and Assessment Office, and Jon Reid, University of Cincinnati Medical Center.

### Greater Pittsburgh Chapter

Jeanette Trauth of the Graduate School of Public Health, University of Pittsburgh, became the 1992 president of the Greater Pittsburgh Chapter in January. On January 18 the chapter sponsored a symposium on "Successful Sitings of Hazardous Waste Incinerators," with speakers Sharla Barber of APTUS Incinerator and Remediation Services, Richard Gimello of Concord Resources, and Pat Pelkover, chair of the Pennsylvania Solid Waste Advisory Committee.

### Michigan Chapter

The Michigan Chapter was officially approved as the Society's 14th chapter at the 1991 SRA Annual Meeting. The 1992 officers elected by the Michigan Chapter are: President, Douglas W. Kononen, Biomedical Science Department, General Motors Research Laboratories, 30500 Mound Road, Warren, Michigan 48090-9055 (Phone 313-986-1351; Fax 313-986-0294); President-elect, Rolf Hartung, School of Public Health, University of Michigan; Sec-

## Chapter Contacts

**Columbia-Cascades:** Jim Dukelow (president), 509-376-7074.  
**East Tennessee:** Jan Borkowski (president), 615-435-3232.  
**Greater Pittsburgh:** Jeanette Trauth (president), 412-624-0968.  
**Lone Star:** Ben Thomas (president), 713-520-9900.  
**Metropolitan:** Paul Moskowitz (president), 516-282-2017.  
**Michigan:** Douglas Kononen (president), 313-986-1351.  
**National Capital Area:** Adam Finkel (secretary), 202-328-5110.  
**New England:** Harlee Strauss (president), 508-655-8315.  
**Northern California:** Thomas McKone (secretary), 510-422-7535.  
**Ohio:** Bert Hakkinen (president), 614-627-1521.  
**Philadelphia:** Isadore (Irv) Rosenthal (president), 215-898-3664.  
**Research Triangle:** Josephine Mauskopf (president), 919-541-6468.  
**Rocky Mountain:** Ralph Grover (president), 303-450-0005.  
**Southern California:** Bob Mulvihill (president), 310-640-1050.

retary, Bradford H. Strohm, Toxic Materials Control Activity, General Motors Corporation, 3044 W. Grand Boulevard, Room 9-256, Detroit, Michigan 48202 (Phone 313-556-1570; Fax 313-974-9546); Treasurer, Kathryn A. Wurzel, Dames and Moore; and Councilors Charles Cabbage, Michigan Department of Agriculture, Pesticide and Plant Pest Management Division, John Nelson, Ford Motor Company, and Catherine A. Simon, Michigan Department of Natural Resources.

### Rocky Mountain Chapter

The November 1991 meeting of the Rocky Mountain Chapter was attended by over 40 members. A panel discussion addressing risk communication in risk analysis was moderated by Sonya Pennock, a risk communication specialist for U.S. Environmental Protection Agency Region VIII.

In December the chapter heard J. Walter Hyer, vice president and associate general counsel for risk management at U.S. West, Inc., address how risk management can be incorporated into the regular management cycle as a means of improving corporate performance.

The chapter officers for 1991-92 are: President, Ralph W. Grover, WASTREN, Inc., 12000 North Pecos, Suite 250, Westminster, Colorado 80030 (Phone 303-450-0005; Fax 303-450-0077); President-elect, Dennis Smith, EG&G Rocky Flats, Inc.; Secretary, Robert D. Melvin, University of Denver, Department of Economics, University Park, Denver, Colorado 80208 (Phone 303-871-2685; Fax 303-871-2156); Treasurer, Robert Benson, U.S. Environmental Protection Agency; and Councilors Yvette Lowney, Gradient Corp., Anthony Cox, Cox Associates, and Craig Armstrong, EG&G Rocky Flats, Inc.

## News from SRA-Europe

SRA-Europe held a successful Third Annual Conference in Paris in December, with approximately 160 people attending from all over Europe, including a delegation of 15 from the former USSR. About 75 papers were presented.

The 1992 Annual Conference will be held in Rome (dates and other details yet to be announced) and will be organized by Executive Committee member Paulo Vestrucci, assisted by an international and multidisciplinary Scientific Committee.

The 1992 Executive Committee of SRA-Europe met in Paris on February 5, 1992, under the chairmanship of incoming President Tony Cox. The Committee discussed a wide range of issues about the development of the Section during the coming year.

A vote of thanks was given to Philippe Hubert for his outstanding efforts and success in organizing the 1991 Annual Conference. Past-President Pieter-Jan Stallen also received a vote of thanks for his service as president of the Section during its formative years. It was agreed that Stallen would take special responsibility for developing the East European activities of the Section.

The need for a permanent secretariat and mailing address for SRA-Europe was discussed. The feasibility and financing of this is to be pursued as a matter of urgency during the next months. In the meantime, action is being taken to stimulate interest from corporate or government sponsors, and to bring the Section's records up to date.

A Nominating Committee was appointed for the Section's next elections, which will be for the 1994 president-elect, one more committee member, and the "European" seat on the main SRA Council, which will be vacated by President Tony Cox in 1993. It was agreed that enough candidates should be identified to make a real contest of the voting. Nominations from European members are welcomed and may be sent to any committee member.

Regarding SRA's Specialty Groups (see page 14), it was pointed out that European members can affiliate directly with these. At present, SRA-Europe is too small to form viable groups in these subject areas in Europe alone. However, this is a definite possibility for the future.

It was also agreed that SRA-Europe should make one annual Distinguished Contribution Award, carrying Honorary Membership, to an individual, and possibly a further award to an organization, that has made a major, well-proven advance in the fundamental science or the application of risk analysis. Members were asked to consider possible candidates for the next meeting.

Other subjects discussed by the Executive Committee included: expansion of membership and activities in Eastern Europe, the content of SRA publications, and the feasibility of a European SRA journal or newsletter. Ideas and contributions will be welcomed.

Further information on SRA-Europe may be obtained by contacting Dr. Tony Cox, Four Elements Limited, Greencoat House, Francis Street, London SW1P 1DH, England (Phone 44-071-973-8041; Fax 44-071-973-8042).

## News from SRA-Japan

Saburo Ikeda, SRA councilor and secretary of SRA-Japan, reported at the 1991 SRA Annual Meeting in Baltimore that the Fourth Annual Symposium of SRA-Japan, held in Tokyo, November 29-30, 1991, was attended by approximately 100 participants. There were 20 presentations on topics including risk assessments relating to cancer from air pollutants, construction of a data-base for risk assessment (hyper-card system), risk management for waste treatment issues in the application of risk assessment and risk management, risk perception in the Japanese public, a risk cost-benefit analysis in the case of benzene in gasoline, the economic issues of "moral hazards" (insurance and utility), and scientific moral risk (problems which followed the discovery of HIV).

**1992 Events.** Events scheduled for SRA-Japan in 1992 begin in February with participation in a national joint forum on "Environmental Sciences and Engineering," sponsored by the Japan Academy of Science and Engineering. The section's Annual Spring Meeting and Workshop on the topic "Practices and Approaches in Chemical Risk Assessment" will be held on June 29 at the University of Tokyo. On November 29-30, the Fifth Annual Symposium will be held at the International Congress Hall, Takaraga-ike, Kyoto. The main theme will be "Urban Risk Issues—Can the Modern City Survive?" Finally, the section is planning the publication of a risk cyclopedia or lexicon and is preparing to select an editorial committee for that project.

**Membership.** In December SRA-Japan had 270 full members, 10 student members, and 16 corporate members of SRA-Japan. The section publishes a quarterly newsletter and a journal, one issue per year. SRA-Japan officers are elected for two-year terms. President Eizi Yokoyama, Deputy Director, Institute of Public Health Ministry of Welfare and Health, and other officers will serve through March 31, 1992.

Further information on SRA-Japan may be obtained by contacting Dr. Saburo Ikeda, Institute of Socio-Economic Planning, The University of Tsukuba, 1-1-1 Tennoudai, Tsukuba, Ibaraki 305, Japan (Phone 0298-53-5380; FAX 0298-55-3849).

## News from SRA, Philippines

Articles on a variety of risk-related issues—including the adoption by Philippines business and industry of a strategy for sustainable development, the Asian Development Bank's recent guidelines for environmental risk assessment, and risk management as an alternative means of protection in the insurance market—compose the second issue of *Risk Watch*, the official newsletter of SRA, Philippines. *Risk Watch* is published jointly by SRA, Philippines and the Technology, Risk, and Development Foundation, Inc. (TRD). The chair of the editorial board is Corazon PB. Claudio, who is president of SRA, Philippines, TRD, and SITECH Resources Group, Inc. *Risk Watch* welcomes articles, research reports, essays, comments, book reviews, announcements, letters, and advertisements on risk and environmental assessment and management (REAM) and related topics. For guidelines on submitting material to the newsletter or information on newsletter subscriptions or SRA, Philippines, contact Dr. Corazon PB. Claudio, P.O. Box 12228, Ortigas Center Post Office 1600, Emerald Avenue, Pasig, Metro Manila, Philippines [Phone 632-631-3138; Fax 632-631-5714].

## Risk-Related Happenings

### SRA Sponsors Risk Assessment Course

SRA will hold its seventh annual course, "New Directions in Risk Assessment" on April 13-14, 1992, at the Hyatt Regency, Crystal City in Arlington, Virginia. The intent of this course is to provide an introductory overview of methodologies, assumptions, and new research in risk assessment. Lecturers will show how to perform and interpret risk assessments and how to use them in risk management. Special emphasis will be given to new developments in pharmacokinetics, reproductive, and immunological risks. The lecturers and their topics are: Curtis Travis of the Center for Risk Management at Oak Ridge National Laboratory—interspecies extrapolation; Elizabeth Anderson of Clement International Corporation—overview of carcinogen and non-carcinogen risk assessment methods; Vince Covello of the Center for Risk Communication at Columbia University School of Public Health—risk communication; Mildred Christian of Argus Research Laboratories—reproductive risk; Roy Albert of the Institute of Environmental Health at the University of Cincinnati Medical Center—dose response and low dose extrapolation of carcinogens; Richard Reitz of Dow Chemical Company—pharmacokinetics and risk assessment; Loren Koller of the College of Veterinary Medicine at Oregon State University—immunological disease; Bernard Goldstein of the Environmental and Occupational Health Sciences Institute—carcinogenetic risk of benzene; Chris Whipple of Clement International—acceptable risk; and Lester Lave of Carnegie-Mellon University—risk management.

For further information call Dr. Curtis Travis, course director (Phone 615-576-2107) or Mary Oran, course coordinator (Phone 615-376-9626).

### States Using Comparative Risk Methods

Environmental officials from at least 27 states will convene in Burlington, Vermont, on February 23-24 to sharpen their abilities to fuse the politics of environmental management with the science of risk analysis and risk reduction. They will be attending a conference, "Using Comparative Risk: A Conference for Practitioners," sponsored by the Northeast Center for Comparative Risk (NCCR) jointly established by the EPA and Vermont Law School last August.

Four states—Washington, Colorado, Louisiana, and Vermont—have completed comparative risk projects. Another 14 states, including several of the nation's most populous, have projects under way or in the planning stages. The EPA Regional and State Planning Branch has sponsored the state projects, and EPA's regional offices have provided technical guidance and support.

The focus of the NCCR conference is to help states design comparative risk projects that are not only technically credible but also politically astute. In many states, that will mean opening the analytical and decision making process to significant public involvement, thus improving the quality of information that goes into building state budgets, policies, and legislation.

NCCR is staffed by Richard Minard, former director of Vermont's comparative risk project, and Kenneth Jones, a biochemist and policy analyst who served on the Vermont project's human health work group. For more information, write to The Northeast Center for Comparative Risk, Vermont Law School, P.O. Box 96, South Royalton, Vermont 05068.

### Risk Assessment Subcommittee Formed in ASTM

The organizational meeting to establish a new American Society for Testing and Materials (ASTM) Subcommittee on Assessment of Risk to Human Health and the Environment from Hazardous Waste Sites was held on September 25, 1991, in McLean, Virginia. This activity was requested by Fred Price, MITRE Corporation, who contacted ASTM in early 1991 expressing a need for standards in the area of environmental and health risk assessment. Although there are several ASTM committees developing consensus standards in various environmental areas, none were addressing risk assessment at hazardous waste sites.

At the September meeting, the approximately 80 attendees elected Price as chairman of the subcommittee and Suellen Pirages of Karch & Associates, Inc., as secretary. They also proposed five task groups to address the standardization of (1) data collection, (2) exposure assessment, (3) toxicity assessment, (4) risk characterization, and (5) general areas (such as terminology, structure of risk assessment documents, and remedial design and remedial action). It was decided that both ecological and human health issues would be addressed within each task group. After reviewing the activities of several ASTM committees, the participants decided that this new subcommittee would best function within ASTM Committee E-47 on Biological Effects and Environmental Fate. The subcommittee is now designated as Subcommittee E47.13. Finally, 1992 meeting dates and locations were set: January 29 in New Orleans, Louisiana; April 28-30 in Pittsburgh, Pennsylvania; and November 6-8 in Cincinnati, Ohio.

For more information on Subcommittee E47.13, contact Dr. Susan P. Canning, ASTM Staff Manager for Committee E-47 on Biological Effects and Environmental Fate (Phone 215-299-5490, Fax 215-299-2630).

### **Celebration!**

## **In honor of the 80th Birthday of Chauncey Starr**

The Electric Power Research Institute and Stanford University will present a one-day symposium in honor of Chauncey Starr's 80th birthday at Stanford on March 27, 1992. The symposium will be titled "Energy, Risk, and the Environment" in recognition of Dr. Starr's major contributions in nuclear power, risk assessment, and environmental studies. (He is a recipient of SRA's 1984 Distinguished Contribution Award.)

The program will include lectures, lunch, a reception, and dinner for a registration fee of \$100 per person (\$40 for reception and dinner only). For additional information, call EPRI Conference Coordinator Lori Adams, 415-855-8763.

### Davies Is Director of RFF Center

J. Clarence (Terry) Davies, currently executive director of the National Commission on the Environment and senior fellow at the World Wildlife Fund, will become the new director of the Center for Risk Management at Resources for the Future (RFF), Washington, D.C., effective October 1, 1992. Paul R. Portney, now vice president of RFF, will remain as the acting director of the Center until then.

### DRMS Announces Five Awards of Research Funding

The Decision, Risk, and Management Science Program has announced five more awards under the National Science Foundation's Joint NSF/Private Sector Research Opportunities Initiative (for a total of eight awards since the program's inception). This initiative provides for joint funding of research proposals by industry and NSF to encourage research that is soundly grounded in a knowledge of private sector problems.

In the Spring of 1991, DRMS received several proposals for funding under the private sector initiative. After extensive mail reviews and a review by the DRMS Advisory Panel, 1991 DRMS Program Directors Robert F. Bordley and L. Robin Keller recommended that awards be made for research in the following areas.

*Advancing the Networked Organization with Group Decision Support Systems.* Investigators: Gerardine DeSanctis and Scott Poole, Fuqua School of Business, Duke University. Cooperating Organization: Texaco, Inc.

*Architecture of Hybrid Decision Support System for Risk Management of Offshore Platforms.* Investigators: Elizabeth Pate-Cornell and Jean-Claude Latombe, Stanford University. Cooperating Organization: Bureau Veritas.

*Detection of Process Change.* Investigator: Stephen Pollock, University of Michigan, Ann Arbor. Cooperating Organization: General Motors Research Labs.

*The Role of Trust in Risk Perception and Risk Management.* Investigators: Paul Slovic, Sarah Lichtenstein, Donald MacGregor, and Robin Gregory, Decision Research. Cooperating Organization: Electric Power Research Institute.

*Product Line and Production Planning in an Environment of High Product Variety.* Investigators: Marshall L. Fisher and Anjani Jain, The Wharton School, University of Pennsylvania. Cooperating Organization: General Motors Research Laboratories.

The deadlines for DRMS proposals are August 15 and January 15. Interested research investigators should submit an NSF proposal (using the NSF guidelines in *Grants for Research & Education in Science and Engineering*) accompanied by a letter of support from a sponsoring private sector organization (the cooperating organization). If NSF decides the proposal is of substantial theoretical and operational value, it may award the investigator up to \$25,000. Moreover, it may match \$1 for every \$2 given in the first year and every \$1 given in the second year by the cooperating organization, up to a maximum of \$50,000 for the first year and \$75,000 for the second year. For information on how to contact DRMS program directors, see page 12.

### Risk Assessment Postdoctoral Research Opportunities

The Chemical Industry Institute of Toxicology (CIIT), a not-for-profit research institute sponsored by 50 major industrial firms, offers opportunities for well-qualified scientists and en-

gineers to participate as postdoctoral fellows in the Institute's research program. The Institute has a multidisciplinary staff of 135 individuals conducting research to provide an improved scientific basis for understanding and assessing the human health risks of exposure to chemicals, pharmaceuticals, and consumer products. It uses a risk assessment orientation to guide a research program directed to understanding the critical mechanisms involved in chemical induction of cancer and respiratory disease.

CIIT provides the opportunity for individuals with recently acquired doctoral degrees in mathematics, computer science, engineering, chemistry, and life sciences to receive postdoctoral training working as members of multidisciplinary teams. Interested individuals are urged to contact the CIIT Human Resources Manager (Phone 919-541-2070, extension 331).

### DNV Acquires Technica

Effective January 28, 1992, Oslo-based Det norske Veritas has acquired the Technica Group, one of the world's leading organizations in risk assessment, safety studies for offshore and land-based industry, and environmental consultancy services. Under the corporate name of DNV Technica, the new company will provide its combined resources and facilities from 11 offices in six countries. Torkell Gjerstad, former managing director of the Technica Group, has been appointed the managing director of DNV Technica.

### EURO Summer Institute Held in Sweden

The Eighth EURO Summer Institute (ESI VIII), organized by the Association of European Operational Research Societies (EURO) for the most promising young European scientists (age 25-35), will be held June 13-27, 1992, at The Rescue Services College, Rosersberg Castle, near Stockholm, Sweden. The theme of the meeting is "Risk Management in Complex Production and Transportation Systems." Each participant will present a research paper on a topic within the theme, and will also hear lectures by invited experts. A special issue of the *European Journal of Operational Research* will be prepared based on papers presented at the Institute. More information may be obtained from: ESI VIII, P. Wulff, FOA, S-172 90 SUNDBYBERG, SWEDEN (Phone 46-8-663-15-00; Fax 46-8-667-32-04).

### Environmental Social Sciences: Call for Papers

"Human Ecology: Crossing Boundaries," the Sixth Meeting of the Society for Human Ecology (SHE), will be held October 2-4, 1992 in Snowbird, Utah. The general theme of the meeting emphasizes the role of human ecology in spanning boundaries between traditional disciplines, theory and practice, individuals and society, and the social, biological and physical environments. According to Thomas Dietz, president of SHE, a significant portion of the program will be devoted to environmental social science. Also, risk is a topic of interest to many SHE members.

The special themes of the meeting include: arts and humanities; global problems; human ecology, wellness, and the individual; interdisciplinary dialogue and integration; resource and policy problems; and theoretical issues. Proposals for papers, posters, workshops, etc. should be submitted by April 1, 1992 to: Scott D. Wright, FCS Department, University of Utah, 228 AEB, Salt Lake City, Utah 84112 (Phone 801-581-8750; Fax 801-581-3007, marked "ATTN Scott Wright").

## Positions Available

### Technology Risk Analysts

Battelle, Pacific Northwest Laboratories is currently seeking Technology Risk Analysts with demonstrated expertise in assessing the technical risk associated with the development, demonstration, and implementation of new technology. Will evaluate risk that a technology or system will not perform as expected, will not be available when needed, or will not be developed within the projected budget.

Successful candidate must be able to work effectively with R&D engineers and scientists and have proven leadership skills in identifying and communicating consistent and defensible analytical methodologies and tools for evaluating activities. Experience in developing and implementing strategies for managing technical risks is desirable. BS, MS or PhD level with 5 or more years of applicable experience required. Send or FAX [509-376-9099] your resume to:

Battelle, Pacific Northwest Laboratories  
P.O. Box 1406  
Dept. 6126-RJZ  
Richland, Washington 99352  
*Equal Opportunity Employer*

### Chairperson, Environmental Health Sciences

The Tulane University School of Public Health and Tropical Medicine (SPHTM) invites applications and nominations for the position of Chairman, Department of Environmental Health Sciences (EHS).

The Department currently offers masters and doctoral degrees in the following program areas: Toxicology and Risk Assessment; Water Quality Management; Hazardous and Toxic Waste Management and Remediation; International Environmental Health; Occupational Health and Industrial Hygiene. Current research areas include toxicology, risk assessment, fate of toxic materials in the environment, links between adverse health effects and the environment, design of functional mitiga-

tion techniques and design of environmental monitoring programs.

Environmental Health is a premier focus of the recently adopted University Strategic Plan. Tulane has made a major commitment to research in this area through the recent establishment of Tulane's university-wide Center for Bioenvironmental Research (CBR). Major federal funding initiating CBR has been allocated to enhance infrastructure, faculty and project-specific research particularly in toxicology and risk assessment. EHS has been provided with an important share of these new resources. It is expected that the new chairman of EHS will play a major role in the further development of CBR.

Candidates are being sought with academic experience and research accomplishments in one or more of the program areas noted above. An earned doctorate (PhD, ScD, MDd, or DrPH) is required. Demonstrated leadership in toxicology or risk assessment would be an asset.

Applications will be accepted until a suitable candidate is identified. Applications from women and persons from minority groups are particularly encouraged. Applicants should forward a curriculum vitae, the names and addresses of three references, and a statement of professional goals, interest and experience to:

Chair, EHS Search Committee  
Office of the Dean, Tulane University SPHTM  
1430 Tulane Avenue  
New Orleans, Louisiana 70112

### Risk Assessment Analysts

The Bethesda, Maryland and Atlanta, Georgia offices of DAMES & MOORE, an environmental consulting and engineering firm, are seeking experienced Risk Assessors for CERCLA and RCRA sites.

These opportunities offer involvement in a variety of projects which include RI/FS and RFI work for government and private

*(Continued on page 22.)*

### New Policy on Classified Advertisements

Beginning with the April 1992 issue, the Society for Risk Analysis is revising its specifications and cost schedule for employment advertisements and will begin accepting advertisements for software and books. The new policy is as follows:

**Employment Advertisements.** Organizations which are not sustaining members of SRA may purchase space for advertisements of employee openings at a cost of \$250 for a 3.25-inch-wide by 3-inch-high column (about one-fourth page) in 9-point type. The column length of an ad may be increased beyond 3 inches at a cost of \$100 per inch.

Organizations which are paid-up sustaining members of SRA may place in each issue of the newsletter, at no charge, one advertisement of an employee opening as a benefit of their sustaining memberships. The advertisement must fit within the specifications given above. Additional space may be purchased at \$100 per inch or additional ads may be purchased at a cost of \$250. [Note: For information on becoming a sustaining member of the Society, call the SRA Secretariat (see address on back page of this newsletter).]

Individual paid-up members of SRA may place in each issue of the newsletter, at no charge, one advertisement seeking employment for themselves as a benefit of SRA membership. The advertisement must fit within the specifications given above.

**Books and Software.** Advertisements for books and software will be accepted at a cost of \$100 per 1-inch column length of a 3.25-inch-wide column.

The newsletter editor has the responsibility and the absolute right to in any way modify the text of any advertisement to make it suitable for publication, to limit the number of issues in which any advertisement may appear to not more than four consecutive issues per request, and to deny, on reasonable grounds any request to publish an advertisement in any specific issue or in any issue whatsoever.

The newsletter will be published four times a year (January, April, July, October) beginning in 1992. Advertisements should be submitted to the editor by the first day of each of those months. Non-member organizations should include billing instructions.

clients, data management and interpretations, and scoping of field sampling programs to fulfill regulatory and technical requirements.

The ideal candidates will possess a strong background in sciences such as hydrogeology, chemistry, toxicology, or related areas and prior experience with risk assessment in accordance with RAGS.

Excellent written and oral communications skills, and pc-level data management abilities are also a must.

DAMES & MOORE offers professional challenges and growth, an excellent work environment and flexible benefits program (including 401K). Please send your resume to:

Sandra Smith, Dept. SRA  
DAMES & MOORE  
7101 Wisconsin Avenue, Suite 700  
Bethesda, Maryland 20814  
*Equal Opportunity Employer*

### International Opportunities for Environmental Risk Assessment Professionals

Research Triangle Institute, a prestigious not-for-profit research organization with a successful, 30 year history of providing technical and policy support to international, U.S. federal, and state agencies, is soliciting candidates for short-term consulting assignments and long-term positions in environmental risk assessment. These assignments would take place in domestic (based in North Carolina and/or Washington, DC), and/or international locations, primarily in developing countries.

RTI is looking for experienced individuals to study environmental health problems in developing countries, assess relative risks and assist in risk management strategy development. Specific skill areas include risk assessment methodologies, risk estimation, comparative risk assessment, uncertainty analyses, and risk assessment training. The applicant must have an M.S. or Ph.D. in Public Health, Toxicology, Environmental Engineering, or related discipline and ten years experience, with at least two years international experience. Foreign language capability is desirable.

For immediate consideration, please forward current resume (referencing this advertisement in your cover letter) and supporting information to:

Director  
Center for International Development  
RESEARCH TRIANGLE INSTITUTE  
300 Park Drive, Suite 115  
P.O. Box 12194  
Research Triangle Park, North Carolina 27709  
*Equal Opportunity, Affirmative Action Employer*  
*(No telephone inquiries)*

### Anticipated Designated Professor (Claiborne Chair in Air Quality/ Environmental Toxicology)

Louisiana State University invites nominations and applications for a newly created professorship with an endowment in excess of one million dollars. Candidates are sought whose career accomplishments and aspirations are oriented toward

solving air pollution and air toxic problems. The terms of the Claiborne Chair specify support for activities that may include: identification of health effects from exposure to air toxic chemicals; study of basic mechanisms associated with air toxic effects on plants and animals; development of strategies that can eliminate or mitigate air toxics and air toxic byproducts; and education of students and the public on important issues of air pollution and air toxics control, mitigation and policy.

The Claiborne Chairholder is expected to be eligible for a tenured position within the Institute for Environmental Studies, although a joint appointment with an appropriate disciplinary department or with the Center for Energy Studies also is possible. The Institute offers both an Environmental Manning and Management Program and an Environmental Toxicology Program. The Chairholder may be associated with either, or both, of these programs depending on experience, accomplishments and interest. Candidates will be evaluated according to their work experience, teaching ability, research and public service contributions, professional visibility and potential for leadership within the University, their discipline and the wider community.

As the chair is likely to be in an interdisciplinary institute which seeks to solve environmental problems and improve environmental policy, a record of working successfully with basic and applied scientists, engineers, industrial, civic and public interest group leaders as well as public policymakers is important.

Anticipated hire date is fall semester 1992, "pending final approval." Applications and nominations received by February 28, 1992 will be given preference. Applicants should include a curriculum vitae, the names, addresses, and phone numbers of five references and a statement of their near and longer term research interests and career aspirations. Materials should be sent to:

Alan G. Pulsipher, Chair  
Claiborne Chair Search Committee  
Center for Energy Studies, Louisiana State University  
Baton Rouge, Louisiana 70803  
[Phone 504-388-4550]  
*Equal Opportunity, Affirmative Action Employer*

## Book Available

### *Managing Risks in the Public Interest*

Risks arising from technology should be managed to maximize the net benefit to society. *Managing Risks in the Public Interest*, by J. S. Nathwani, N. C. Lind and E. Siddall, members of the Institute for Risk Research, provides a framework for the implementation of the principle of maximizing the net benefit to society. Two indicators of the expectancy and quality of life are presented and compared as criteria for decision making in policy matters on lifesaving and safety. Available @ \$40 U.S. from the Institute for Risk Research, University of Waterloo, Waterloo, Ontario, N2L 3G1 (Phone 519-885-1211, ext. 3355).

## Software Available

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Contact us for more information on these  
programs or for custom models and software  
development at:

Applied Biomathematics  
100 North Country Road  
Setauket, New York 11733  
(Phone 516-751-4350; FAX 516-751-3435)

## Calendar of Events

April 13-14. SRA's ANNUAL RISK ASSESSMENT COURSE, Arlington, Virginia (see page 19).

April 21-22. INSIDE Cal-EPA: REGULATION, ENFORCEMENT, ORGANIZATION, Radisson Hotel, Sacramento, California. Sponsored by California Report (publication), first major conference on the agency, its organization, role, and impact. Speakers include James M. Strock, Cal-EPA chief. For more information contact California Report, P.O. Box 7167, Ben Franklin Station, Washington, D.C. 20044 (Phone 1-800-424-9068 [703-892-8505 in Washington, D.C. area]; Fax 703-685-2606).

May 4-8. 21ST ANNUAL ONE-WEEK SHORT COURSE ON HIERARCHICAL-MULTIOBJECTIVE APPROACH IN WATER RESOURCES PLANNING AND MANAGEMENT, Peabody Hall, University of Virginia, Charlottesville. Sponsored by Center for Risk Management of Engineering Systems and Systems Engineering Department of University of Virginia, with co-sponsors including SRA. 1992 Theme: Risk Assessment and Management. Course director: Yacov Y. Haimes. Fee: \$900 (\$450 for students). For more information, contact S. Gingras (assistant to Dr. Haimes), Center for Risk Management of Engineering Systems, University of Virginia, Thornton Hall, Charlottesville, Virginia 22903 (Phone 804-924-0960; Fax 804-924-0865).

June 1-5. NATO ADVANCED RESEARCH WORKSHOP: USE OF BIOMARKERS IN ASSESSING HEALTH AND ENVIRONMENTAL IMPACTS OF CHEMICAL POLLUTANTS, Grande Hotel Das Termas De Luso, Luso, Portugal. The purpose is to bring together international experts on biomarkers and biomonitoring to formulate a unified strategy for development and validation of biomarkers as a means of assessing the status of human and environmental health. For more information, contact the workshop director: Dr. Curtis C. Travis, P.O. Box 2008, MS-6109, 4500S, Oak Ridge National Laboratory, Oak Ridge, Tennessee 37831-6109 (Phone 615-576-2107; FAX 615-574-9887).

June 8-10. RISK MANAGEMENT—EXPANDING HORIZONS, Boston, Massachusetts. Sponsored by the American Nuclear Society's (ANS) Power Division and several cosponsors, including SRA. Objectives are: 1) to provide a forum for discussing issues and sharing ideas regarding risk management in potentially hazardous industries, and 2) to address identification, evaluation, and reduction of risks of all types from multi-disciplinary, multi-industry, and geographically diverse perspectives. Materials will be available in April. Contact Dr. Ronald A. Knief, ERC Environmental and Energy Services Co., P.O. Box 7010, Mechanicsburg, Pennsylvania 17055-7010.

June 9-12. TENTH SUMMER INSTITUTE IN RISK MANAGEMENT IN ENVIRONMENTAL HEALTH AND PROTECTION (AND QUANTITATIVE RISK ASSESSMENT), Robert F. Wagner Graduate School of Public Service, New York University, New York City. Course provides managerial, decision-making, and quantitative risk assessment skills for public and private sector managers and specialists in environmental protection, health, and safety, emergency services, and regulation relating to chemical substances in the environment. Fee: \$895 (non-credit certificate) or \$1,508 plus \$25 fee (4 units of graduate course credit). For more information and applications, contact: Professor Rae Zimmerman, Course Director, Summer Institute in Risk Management in Environmental Health and Protection, Robert F. Wagner Graduate School of Public Service, New York University, 4 Washington Square North, New York, New York 10003 (Phone 212-998-7432 or 7430).

June 22-26. PRINCIPLES OF BIOSAFETY FOR CLINICAL, INDUSTRIAL, AND ACADEMIC FACILITIES, Harvard School of Public Health, Boston, Massachusetts. Tuition: \$1200. For information, contact Mary F. McPeak, Office of Continuing Education, Harvard School of Public Health, 677 Huntington Avenue, Boston, Massachusetts 02115 (Phone 617-432-3515; FAX 617-432-1969).

June 29. SRA-JAPAN'S ANNUAL SPRING MEETING, University of Tokyo (see page 18).

August 3-7. EMERGENCY PLANNING FOR CHEMICAL ACCIDENTS, Harvard School of Public Health, Boston, Massachusetts. Tuition \$1025. For more information, contact Mary F. McPeak (see June 22 above).

December 6-9. SRA 1992 ANNUAL MEETING, San Diego, California (see page 7.)



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**Note:** Contributions to the newsletter should be faxed to  
615-927-8379 (or 615-688-9888 [Res.]) or mailed to:

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## Editor's Comments

Beginning with this issue, RISK newsletter will be printed on white enamel recycled paper and will utilize two ink colors. This is the first step in a gradual upgrade in appearance approved by the SRA Council at its December meeting. The newsletter will also resume publication of four issues per year—in the months of January, April, July, and October.

Our proposal to the Council was for four 20-page newsletters. Since this issue is 24 pages, we will no doubt have to curtail the number of pages in at least one subsequent issue this year.

Unfortunately, even with 24 pages we have been forced to defer the publication of several stories and pictures from the 1991 Annual Meeting. For example, we have not touched upon the content of the plenary addresses by 1991 SRA Distinguished Contribution Awardees Paul Slovic and Baruch Fischhoff. Neither have we mentioned the luncheon addresses by F. Henry Habicht II, Deputy Administrator of the U.S. Environmental Protection Agency, and Robert A. Frosch, Vice President—General Motors Research Laboratories. Finally, we have not discussed some very interesting reports given by attendees from Eastern Europe, as well as a number of other events, including the "debate" on whether or not there should be a PhD degree in risk analysis.

The staff hopes to catch up with these stories in the next issue. At least, we shall try. In the meantime, we appreciate the vote of confidence of the SRA Council and the help we receive from the membership as we endeavor to gather the news. With your continued cooperation, we are confident that RISK newsletter will become the valuable publication we all want it to be.

—Lorraine S. Abbott

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