



RISK *newsletter*

Published by the SOCIETY for RISK ANALYSIS

Volume 18, Number 1

First Quarter 1998

Call for Nominations

Editor-in-Chief and Area Editor Positions for *Risk Analysis: An International Journal*

The Publications Committee of the Society for Risk Analysis (SRA) is soliciting nominations for three editorial positions for *Risk Analysis: An International Journal*, which is the flagship publication of the Society. The Committee is responsible for soliciting nominations for editor-in-chief and area editor positions for the *Journal*, and recommends candidates to the SRA President and Council. The Publications Committee also determines editorial policy.

The editor-in-chief of the *Journal* currently works with three area editors in Engineering, Environmental and Health Risk Assessment, and Social and Decision Sciences. A fourth area editor is being added in Ecological Risk Assessment.

Nominations are to be submitted by **15 May 1998**. The Committee will present its recommendations to the SRA Executive Committee and then to the Council at its next meeting in June 1998. This will allow for a smooth transition period in the summer and fall of 1998 for the new editors.

Editor-in-Chief

The editor-in-chief works closely with the area editors to ensure that a sound peer-review policy is carried out, solicits *Journal* articles, and carries out the policies of the Society. The editor-in-chief is responsible for organizing the content of each issue of the *Journal*, using articles accepted by the area editors and maintaining balance across primary disciplines, specializations, etc. The editor-in-chief is expected to use innovative mechanisms such as special issues, op-ed pieces, and editorials to promote the interests of the Society and to stimulate lively interest in the *Journal* across a broad audience. The editor-in-chief will interact with the publisher as needed and administer, with the assistance of the Secretariat, any changes in publishing arrangements. The editor-in-chief serves for a five-year term, effective January 1999.

Candidates for the position of editor-in-chief should:

- Be innovative and have strong writing and sound managerial skills
- Be very familiar with the Society for Risk Analysis and the Society's knowledge base
- Not hold positions that conflict or compete with those of the editorship

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Call for Nominations for SRA Officers

The SRA Nominating Committee invites nominations for the following offices in the Society's 1998 elections:

President-elect Treasurer Three Councilors

The Treasurer serves for two years. Councilors serve for three years and are ineligible for reelection until one year has elapsed following the completion of their terms.

Please submit nominations with a brief paragraph supporting each by **29 May 1998** to the Chair of the Nominating Committee: John Graham, Harvard School of Public Health, Center for Risk Analysis, 718 Huntington Avenue, Boston, MA 02115, fax: 617-432-2492, e-mail: jgraham@hsph.harvard.edu.

(Nominations, continued from page 1)

- Have access to institutional, secretarial, and administrative support for running the *Journal* (the Society does provide limited support for editors)
- Have the time commitment necessary for the work
- Ensure that the interests of the Society are promoted by the *Journal*, and not have the *Journal* be a platform for any special interest.

Area Editor for Health Risk Assessment
Area Editor for Ecological/
Environmental Risk Assessment

The area editors are responsible for having all submitted articles peer-reviewed in a timely manner, providing constructive feedback to authors who submit manuscripts, making decisions as to which articles are to be published, and forwarding those on to the editor-in-chief. Area editors shall also solicit manuscripts in their field for consideration by the *Journal*. Although area editors are expected to have skills and responsibilities similar to those of the editor-in-chief, much greater emphasis will be placed on the candidates' specialized knowledge in either health risk assessment or ecological and environmental risk assessment as appropriate. The area editors typically serve for a three-year term. The position of area editor for environmental and health risk assessment, an existing position (to become health risk assessment), is effective no later than January 1999. The position of area editor for ecological/environmental risk assessment is a new position, and is effective immediately.

Nominations and statements of the nominees should initially only include the name and contact information for the nominee. At a later date, the Committee may request a short biographical sketch particularly highlighting any editorship or analogous experience, a brief statement about plans for the *Journal*, and resources that can be accessed to support *Journal* activities.

Submit all nominations no later than 15 May to:

Professor Rae Zimmerman (Publications Committee Chair)

Robert F. Wagner Graduate School of Public Service

New York University

4 Washington Square North

New York, NY 10003

E-mail submissions are acceptable:
 zimmmnr@is2.nyu.edu

Submissions will be held in confidence by the Publications Committee and the Council and Secretariat as appropriate. ◇◇◇

President's Message

I would like to share with you some of the initiatives that are being pursued by the SRA Council and committees.

1. SRA First World Congress on Risk Analysis, London, UK, June 2000

In order to facilitate a world-wide exchange of ideas, the Society for Risk Analysis is organizing a World Congress in the London area over a three-day period in June 2000. Its purpose will be to assess the latest advances in the theory and methodology of risk analysis as applied to institutional settings for major national and international decision making. The Congress will be targeted to professionals in government, industry, academia, and the not-for-profit sectors who are engaged in the methodology, management, and communication of risk issues such as environmental conditions, chemicals, food safety, infrastructure, and natural hazards. Given its focus on risk and the approaches of risk assessment, risk communication, and risk management across a wide range of issues, the SRA is in a unique position to organize such a Congress. An interactive, intellectual process has been developed to ensure its success. A planning committee consisting of SRA representatives and chaired by our Past President, Rae Zimmerman, will oversee the entire operation. Representatives from other organizations are expected to join this effort. A program committee, selected by the planning committee, will choose a detailed set of themes within the two broad areas of (1) methodology and (2) risk and governance.

2. Proposed New Educational and Research Centers for Risk Analysis

Following an initiative by former SRA President John Graham to establish national educational and research centers for risk analysis, the SRA Council commissioned the Education Committee, chaired by Tim McDaniels, to prepare a statement on the need for and benefits of such centers. The Executive Committee will now act on the Committee's findings. We believe that the expansion of university-based activities in risk analysis is crucial to improving the decision making processes with which the United States manages risk. If these centers go forward, long-term progress in decision making about such important issues as transportation risks, environmental risks, food safety, medical risks, natural hazards, and technological risks will be improved. The end result will be potential improvements in safety, efficiency, and equity regarding these and related issues. The growing interest in risk analysis reflects a widespread belief that the United States can do a much better job of responsibly addressing and reducing risks. Furthermore, although the explosion of interest in risk analysis is encouraging, the SRA Council is concerned that the demand for qualified professionals and scientists will undoubtedly outstrip the number of well-trained people in this field. Professionals who understand and can integrate the various components of risk analysis for a wide range of problems are in short supply. This shortfall is a constraint to the growing reliance on risk analysis approaches.

3. Development of Technical Standards for Risk Analysis

The SRA Advisory Board, chaired by former SRA President John Garrick, has prepared for the Council's consideration a discussion paper on the development of technical standards for risk analysis. The ultimate objective is to formulate such technical standards for application to select industries.

I will continue to keep you informed on the activities that are on the Council's agenda.



Yacov Y. Haimes

SRA Award Winners Announced at 1997 Annual Meeting

The 1997 SRA awards were presented at the Tuesday morning Plenary Session of the 1997 Annual Meeting of the Society for Risk Analysis which was held 7-10 December in Washington, D.C.

Arthur C. Upton

Distinguished Achievement Award

"I'd like to express my congratulations and appreciation to the other awardees," said Arthur C. Upton, M.D., upon receiving the SRA's Distinguished Achievement Award. "I feel deeply humbled."

Upton, Clinical Professor, Environmental and Community Medicine, University of Medicine and Dentistry of New Jersey, Robert Wood Johnson Medical School, said he was reminded of Sir Isaac Newton who said, "We stand on the shoulders of giants," and feels he has been lifted up by friends, colleagues, and students.

He recalled the days during the 1960s when he was doing research at Oak Ridge National Laboratory and a leading experimentalist allowed Upton to work with him for the entire day. "It was a heady experience for me," Upton commented. "He said, 'Upton, isn't it marvelous to be paid to play?'"

Reflecting on his life as a scientist, Upton said the book *The Cathedrals of Science*—which describes how each individual stone cutter preparing blocks doesn't seem to do much, but the blocks put together make a beautiful cathedral—is what he is reminded of when thinking about science. He explained that individual events may not seem significant but if you put them together you soon have a "cathedral."

Upton went on to say how thrilled he is that programs for the Annual Meeting have become increasingly rich over the years, and commented on the importance of the SRA in his life.

"I really can't find words to express to you how much my association with you has meant to me over these decades in many cases," Upton concluded. "I must express how touched I am with this recognition."

Throughout his career, Upton has made exceptional contributions to risk analysis, particularly health risk assessment. He performed some of the seminal work on the effects of radiation on cancer induction. At the National Cancer Institute, he was a leader in developing initiatives and approaches to better understand the etiology of cancer by environmental agents as a means of eventually reducing the human cancer burden. Upton was Vice Chair of the National Research Council Committee on Risk Assessment of Hazardous Air Pollutants which produced one of the famed references in risk assessment, *Science and Judgement in Risk Assessment*.



the Society, which have drawn a wide audience. She has been strongly and consistently devoted to enhancing the role of SRA in teaching and in the scientific exchange of data and ideas.

Dennis J. Paustenbach

Outstanding Risk Practitioner Award

Through word and deed, Dr. Dennis J. Paustenbach, McLaren-Hart/ChemRisk, has provided outstanding leadership in the practice of health risk assessment. He has demonstrated a unique ability to apply the scientific method to understand with remarkable clarity risk-related problems. His evaluations have been held repeatedly as models for others to follow because of their scientific robustness, their practical application to real-world problems, and their technical insights.



Ann Bostrom

Chauncey Starr Award

Dr. Ann Bostrom, in a relatively short time of her career, has made exceptional strides in the application of the social sciences to risk analysis. Bostrom, Assistant Professor at the Georgia Institute of Technology's School of Public Policy, is a scholar in risk perception and its implications for risk communication and decision making. This work has had a wide range of applications, for example to radon, hazardous wastes, electromagnetic fields, and global climate change. Her notable work within this area has been as a key collaborator on widely published and applied research on mental models.



Steve Brown

Presidential Recognition Award

Steve Brown, Director of R2C2 (Risks of Radiation and Chemical Compounds), received the Presidential Recognition Award for his contribution in the design and implementation of the Society's Web site. The site has become an important link within the risk community and continues to grow under Steve's expert guidance.



Elizabeth Anderson

Outstanding Service Award

During the past 10 years Dr. Elizabeth Anderson, President and CEO, Sciences International, Inc., has worked tirelessly for the SRA. Her contributions include major fund raising from industrial supporters, through her role as Chair of the Gifts and Grants Committee. As Chair of the SRA Conferences and Workshops Committee she has introduced and expanded the number of workshops and forums offered by



SRA Fellows



Richard
Wilson



Lauren
Zeise



Rae
Zimmerman

1997 SRA Annual Meeting Speakers

The Society for Risk Analysis was privileged to have three distinguished speakers at the 1997 Annual Meeting held Sunday-Wednesday, 7-10 December, in Washington, D.C. General Alton D. Slay spoke at the Monday morning Plenary Session, Dr. George Apostolakis spoke at the Monday luncheon, and Dr. William A. Wulf spoke at the Tuesday morning Plenary Session.

The Role of Risk in Defense Acquisition: General Alton D. Slay

“One cannot be a good manager without being a good risk manager and one cannot be a good risk manager without being a good manager,” began General Alton D. Slay in his talk “The Role of Risk in Defense Acquisition.” Slay, President of Slay Enterprises, Inc., and the former Commander of the Air Force Systems Command, chaired the Slay Commission which studied the Challenger disaster. He commented that he is interested in risk because he has been managing risk throughout his career, and he compared the components of risk management to a three-legged stool. “One cannot sit comfortably on a stool with two legs,” he stated. He went on to explain the three “legs” of risk management which must all be taken into consideration when the Department of Defense receives a proposal from a government contractor and the inherent risk in what is being proposed is analyzed.



The first leg of the stool is risk recognition which, according to Slay, is where a lot of public policy and public and private ventures fail. “The hardest part is recognizing risk,” he said. “What you don’t know won’t kill you; what you do know will help you die happy because you knew it was coming.”

The second leg of the stool is risk assessment, including assessment of performance risk and assessment of proposal risk. “Assessment of performance is fairly straightforward,” Slay said. The government checks out the past performance of the contractor and arrives at an integrated assessment of performance risk from collected data. “Assessment of proposal risk [the way risk is portrayed in the proposal] is totally separate from performance risk,” he continued. He said proposal risk is always baselined by the contractor, not the government, because the contractor has control over analysis methods and the quality of risk analysis varies from company to company.

The third leg of the stool is risk mitigation. In a proposal a contractor should tell what will happen if risk is not mitigated, describe past and current plans for mitigation, and offer a well-reasoned schedule and cost projection for mitigation of work to be done.

How a contractor displays the three-legged risk stool will help get a proposal accepted, according to Slay. “The government risk evaluation system works and it works well,” he said. “Although the system has a few soft spots . . . it isn’t broken.”

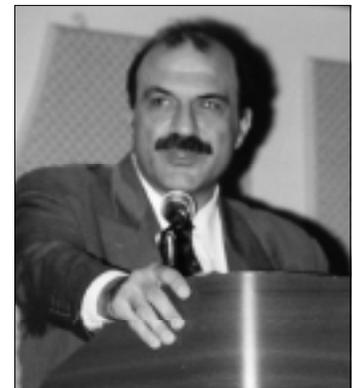
Observations on the NRC’s Risk-Informed Regulatory Initiative: Dr. George Apostolakis

“The first risk assessment methodology for nuclear power plants was published in 1975—more than 20 years ago; however, risk information is only now beginning to become a formal part of the regulatory system,” according to Dr. George Apostolakis, Professor of Nuclear Engineering at Massachusetts Institute of Technology.

Apostolakis, who is a member of the Statutory Advisory Committee on Reactor Safeguards of the U.S. Nuclear Regulatory Commission (NRC), began his talk, “Observations on the Nuclear Regulatory Commission’s Risk-Informed Regulatory Initiative,” by explaining what probabilistic risk assessment (PRA) is and how it should be used in regulatory matters. He said that the 1995 PRA Policy Statement issued by the Commission urged the NRC staff to use PRA in all regulatory activities. He summarized the statement as follows:

- The use of PRA in all regulatory matters should be increased to the extent supported by state-of-the-art in PRA methods and data and in a manner that complements the defense-in-depth philosophy.
- PRA should be used to reduce unnecessary conservatism associated with current regulatory requirements.
- PRA evaluations should be as realistic as practicable and supporting data should be publicly available.
- Uncertainties in PRA evaluations need to be considered in applying the Commission’s safety goals for new generic requirements.

Apostolakis then went on to state the quantitative safety goals of the NRC. These objectives are that “early and latent cancer mortality risks to an individual living near the plant should not exceed 0.1 percent of the background accident or cancer mortality risk, approximately 5×10^{-7} per year for early death and 2×10^{-6} per year for death from cancer.” He said that these goals are “generic—they can’t be applied to an individual nuclear power plant. If you want risk-informed regulations you have to have the



means to relate them to specific plants—they can't be generic.”

He continued, “The current initiative deals with changes to the current licensing basis that a utility may request. This request may be supported by a probabilistic analysis that shows that the proposed change does not lead to unreasonable increases in risk. It is important to realize that PRA is not replacing the existing safety philosophy which is based on traditional concepts such as defense-in-depth and safety margins. The problem with this approach is that it can be overly conservative and burdensome to the licensees. PRA is viewed as a means of making the regulatory system more rational by removing unnecessary conservatism from the regulations and possibly adding new requirements where necessary.”

Apostolakis said the risk-informed initiative has been formulated in terms of five principles:

1. The proposed change meets the current regulations unless it is explicitly related to a requested exemption or rule change.
2. The proposed change is consistent with the defense-in-depth philosophy.
3. The proposed change maintains sufficient safety margins.
4. Proposed increases in core damage frequency and risk are small and are consistent with the intent of the Commission's Safety Goal Policy Statement.
5. The impact of the proposed change should be monitored using performance measurement strategies.

Apostolakis concluded his presentation by discussing the decision rules in terms of changes in the core damage frequency and the large early release frequency. He said, “The general guidance for the use of PRA in regulatory decision making is provided in Regulatory Guide 1.174, ‘An Approach for using Probabilistic Risk Assessment in Risk-Informed Decisions on Plant-Specific Changes to Current Licensing Basis.’ This document is under review by the Commission and a decision is expected in spring 1998.”

Changing Nature of Engineering: Dr. William A. Wulf

“We have a society which is addicted to technology, but yet is technologically ignorant,” explained Dr. William A. Wulf, President of the National Academy of Engineering (NAE), as he began his discussion about several of the initiatives underway at NAE.

One of these initiatives is on technological literacy. He gave some examples of the problems encountered when people don't understand the process of engineering. “Nuclear power is an example of irrational fear and it's because people fail to understand the process of engineering,” according to Wulf. “It's impossible to convey the facts about nuclear power, but we need to work on conveying the process.”

Wulf then reviewed another initiative of NAE that deals with the changing nature of engineering. He outlined eight different dimensions of change—all of which are occurring simultaneously. Four are technical, three are human, and the other deals with the rate of change.



The four technical dimensions are:

- The exploding design space which is due to the vastly increasing set of available materials.
- The rapidly dropping cost of computers and telecommunications.
- The complexity of engineering due to the rapidly increasing number of available components and the number of different kinds of components.
- The tool set that the engineer works with which is increasing rapidly—and the next generation will work with synthesis tools.

Human factors that are changing include:

- The role of the engineer in a firm must be as a part of a team and must encompass more disciplines.
- There is globalization—commodities are bought around the world.
- There is a technological intensity of the manufacturing and service industries. Engineers who once concentrated on the engineering of physical things now need to expand to the engineering of things such as the human genome.

Wulf said that the eighth dimension is that the rate of change in engineering is going up rapidly and that there is less time to absorb the change.

He said many people have described the half-life of an engineer as the time that it takes for half of the knowledge of an engineer to become obsolete. This has been estimated as two to seven years. Therefore, engineers need to plan for a life-long learning experience.

He concluded by reminding the audience that through the “Academies” we in the United States have a mechanism for providing unbiased and authoritative advice to our government and that we should get or stay involved. ◇◇

Journal Discounts

Publisher Discounts of 20% to 30% are available to SRA members on other major journals. This program has been initiated in recognition of the various disciplines represented within the Society. Ordering details and the latest list of participating publishers will appear on our Web site (<http://www.sra.org>) starting April 1998.



SRA-Japan

10-Year Anniversary Spring Symposium

Friday, 19 June 1998, 14:00-17:00

Conference Room, Sanjo Kaikan, Hongo Campus,
Tokyo University, Tokyo
Globalization of Environmental Risk &
Issues in the 21st Century

For the last 10 years, since the establishment of the Society for Risk Analysis-Japan Section in 1988, we have moved into the age when risk assessment and management are required to be systematically and comprehensively developed. The importance of risk concepts or measures to cope with environmental pollution and ecological disruption has been emphasized, partly because pollution has come to be of low concentration and partly because new problems of environmental or technological risks such as dioxin, hormone disrupters, electromagnetic fields, etc., have been raised. It is inevitable that risk management issues on these diversified environmental problems will gain more social importance toward the 21st Century.

The spring symposium, commemorating the 10th anniversary of SRA-Japan, will focus on the above aspects and discuss the future direction with three experienced lecturers from interdisciplinary fields speaking on environmental risk research, management, and measures toward the 21st Century. This symposium will be open to all SRA members and the general public as well. We hope many people with interest and concern will share this opportunity.

The Symposium Convener is Masanori Kabuto, Senior Researcher, National Institute of Environmental Studies; the Chairperson is Hirota Hirose, President of SRA-Japan, Professor, Tokyo Women's University

Topics and Lectures will include:

- (1) Earth Environment Problems, from the viewpoint of global warming, by Dr. Shuzo Nishioka, Director and Chief Researcher, Earth Environment Research Center, National Institute of Environmental Studies, Environmental Agency, Japan;
- (2) New environmental risk issues and factors in the 21st Century, by Honorary Professor Tsugumi Suzuki, Ex-Director, National Institute for Environmental Studies, Environmental Agency, Japan; and
- (3) Citizens' participation and risk communication toward the 21st Century, Professor Tomitaro Sueishi, Shiga Prefectural University, Ex-President (The 1st President), SRA-Japan.

Proceedings of Hawaii SRA and SRA-Japan Joint Annual Meeting

The English Version of the *Japanese Journal of Risk Analysis*, Vol.8, No.2, 1997, including 20 papers, with 198 pages, is published and now available for sale (\$20.00 per copy). Please contact SRA-Japan Secretariat Saburo Ikeda, e-mail: <srjapan@ecopolis.sk.tsukuba.ac.jp>, fax: (81)+298-55-3849.

Contents include:

Foreword: Dr. E. Yokoyama

Message: Dr. D.W. North

Introduction: Professors S. Ikeda and T. Morioka

Editorial: E. Yokoyama: "Risk Assessment and Management

Practices and Research on Environmental Pollution with Hazardous Chemicals in Japan"

Research Papers:

Environmental Burden and Health Risk

Y. Matsui, M. Tanaka, and M. Osako: "Risk Assessment and Risk Management in Waste Life Cycle for Mercury in Used Dry Cells"

S. Morisawa, H. Shiba, and Y. Inoue: "Evaluation of Potential Risks in Municipal Solid Waste Management Systems and Their Reduction. Options: A Case Study in Kyoto City Area"

K. Tomono: "The Status of Risk Management in Water Utilities in Japan"

N. Ishimaru and T. Morioka: "Frequency of Water Quality Testing Specified by Risk Factors in the Public Water Supply"

Global Risk

A. Sasaki, I. Uchiyama, N. Mori, Y. Honda, and H. Harasawa: "Health Effects and Risks at the Population Level in Japan by Global Warming"

A. Tokai, A. Yuasa, and H. Dowlatabadi: "Climate Change Scenario Analysis Assessment of Alternatives Using Multiattribute Utility Measures"

M. Ohe and S. Ikeda: "Transboundary Environmental Risks via Trade Between Japan and Developing Countries: Case of Land Use and Land Cover Change"

Earthquake Risk and Disaster Prevention

E. Hideshima and N. Okada: "Design of a Fail-Safe Urban Infrastructure System Against Multiplex Disasters: A Petri-Net Approach in Case of Harbor and Its Hinterland"

T. Morioka, N. Yoshida, and T. Fujita: "Risk Management in Rescue and Life Support in the Kobe Earthquake"

A. Takao: "Some Proposals to Improve the Earthquake Insurance System in Japan—A Lesson from the Great Hanshin Earthquake"

Risk Perception and Risk Communication

T. Kinoshita and K. Yoshino: "Risk Perception and Risk Avoidance Behavior in Connection with the Great Hanshin Earthquake"

R. Kanda, S. Kobayashi, and J. Kanda: "Risk Perception of Industrial and Social Events Among General Education Course Students at a Japanese University"

N. Matsuda, N. Shinoda, and K. Takemura: "The Procedural Effects on the Public Perception of Automotive Risks Measured in Triple-Values"

Y. Maeda: "Hypertext for Communicating Environmental Information"

Economic Evaluation

Y. Sakai: "Economic Analysis of Risk and Insurance"

A. Kishimoto: "A Comparative Analysis of Cost-Effectiveness of Risk Reduction Policies in Japan"

T. Oka, M. Gamo, and J. Nakanishi: "Risk/Benefit Analysis of the Prohibition of Chlordane in Japan—An Estimate Based on Risk Assessment Integrating the Cancer Risk and the Noncancer Risk"

Technical Reports

K. Nakayachi: "Lay Judgment of the Threshold of Harmful Substances and Its Relationship to the Risk Perception of Safety Messages"

T. Murayama: "Management of Risk-Sharing from the Inter-Regional Point of View" ◇◇



Committees

Electronic Media Committee

Steve Brown, Chair

The Electronic Media Committee continues to add features to the SRA Web site (<http://www.sra.org>). New this quarter are a modest search capability (accessible from the home page) and an experimental "Question of the Month." With a budget for external assistance, we hope to improve the on-line abstract submission process this year as well.

The site continues to attract about 1,400 visits per month. One of the most popular areas, accessed by about a quarter of the visitors, is the Opportunities page (<http://www.sra.org/opptys.htm>). It features employment openings, fellowships, and other opportunities of interest to risk analysts.

Jim Englehardt has replaced Steve Maher on the Committee. Alison Cullen joins Chris Frey as a Council liaison to the Committee.

Conferences and Workshops Committee

Elizabeth L. Anderson, Chair

Committee Membership

SRA is pleased to announce the membership for the Conferences and Workshops Committee for 1998. The members of the Committee are Elizabeth L. Anderson, Chair, Patricia Bittner, William Farland (liaison for the Council), Scott Ferson, Jack Fowle, Annie Jarabek, James Lambert, Virginia Sublet, and Robert Tardiff.

Comments and inquiries regarding Committee activities can be addressed to Elizabeth L. Anderson, Sciences International, Inc., King Street Station, 1800 Diagonal Road, Suite 500, Alexandria, VA 22314, or faxed to 703-684-2223.

SRA Forums

The SRA Conferences and Workshops Committee announces its 1998 Forums program. The SRA Forums are intended to explore current issues of national interest in risk assessment.

(1) "**Risk of Extreme and Rare Events**"—This Forum will be held 27 and 28 April at The Boar's Head Inn in Charlottesville, Virginia, organized by Drs. Yacov Haimés and Jim Lambert. In the process of risk assessment, extreme and catastrophic events are often underestimated and commensurated with other less consequential events. Managers and decision makers are often most concerned with a specific case under consideration, and not with the likelihood of the average outcomes that may result from various risk estimates. In this sense, the expected value of risk is not only inadequate, but can lead to fallacious results and interpretations. A modification of this approach through the use of conditional expectation will be better shown to capture the risk. The Forum will focus on rare and extreme events within the overall risk-based decision-making process, where trade-offs among costs, benefits, and risks can be generated and evaluated. Hands-on application of extreme event analysis to problems in systems acquisition (e.g., software acquisition, cost overrun, and schedule delay), natural and man-made hazard mitigation, and infrastructure rehabilitation will be part of the workshop experi-

ence. This Forum has been approved for 2 CM points, and the ABIH approval number is 4335. Cost: \$275-400, depending on member status and time of registration.

(2) "**Protecting Sensitive Groups as Mandated by FQPA and the SDWA: Can Science Meet the Challenge?**"—This Forum, organized by Dr. Jack Fowle, will be held 29-30 June on Capitol Hill in Washington, D.C. Do environmental laws create the unrealistic expectation that science alone can be used to determine "safety"? Do these laws make it clear that environmental decisions are informed by science in meaningful, important ways, but that they must also be shaped by other considerations such as technical feasibility, values, politics, and social issues? The recently passed Food Quality Protection Act (FQPA) and Safe Drinking Water Act (SDWA) provide a focus for the discussion about the tough issues surrounding the use of science for decision making. The first session will provide a Congressional perspective: members of Congress share a desire for certainty when they are protecting the public from harm, but uncertainty is a fact of life when it comes to knowing the effects caused by environmental exposures. Who Congress listens to and the importance of consensus in the scientific community will be compared to the concerns of constituents. The next session will explore the proper role for science in decision making, given the great uncertainties that exist. Members of the public, advocacy groups, and the regulated community have differing views about the role of science in environmental decision making. What are the factors that should be considered and how should science compare to other factors? Other sessions will discuss whether the FQPA and SDWA are effective tools to protect children or help prevent endocrine disruption or whether they raise false expectations and pose significant burdens on society, specific scientific requirements of these legislative acts, and the broader implications for implementing statutory requirements when science is uncertain, such as addressing or not addressing cumulative (aggregate) risk or introducing an additional safety factor of 10 for children's health protection. A final session will examine science in the context of who is telling the story and include ways to avoid a media frenzy in the face of uncertainty, crafting your message to evoke the sympathies of an audience. Further information can be obtained by contacting Fowle by phone at 202-260-7118 or by e-mail at <fowle.jack@epamail.epa.gov>.

(3) The third Forum is planned for late fall 1998 or winter 1999 and will examine "**Communicating Scientific Information in the Courtroom.**" This Forum will emphasize the same issues raised at last year's very successful Forum: "Communicating Scientific Information to Judges and Juries: Why Experts May Differ with the Verdict." This year's Forum will focus on why expert opinion may be interpreted in different ways and whether the Daubert decision and its impact on the current process make this process more understandable. A case exploring how this decision will effect risk assessment litigation will be presented. More details on this Forum will be issued later in the spring. Further information can be obtained by contacting Virginia Sublet by phone at 614-848-4325 or by e-mail at <sublet@ix.netcom.com>.

Further information on any of these Forums can be obtained by calling the Secretariat at 703-790-1745.

SRA 11th Annual Symposium Announcement

The 11th Annual Risk Assessment Symposium sponsored by the Society for Risk Analysis, "Human Health Risk Assessment: Advances and Uncertainties," will be held in early October on the East Coast and is being organized by Dr. Elizabeth L. Anderson.

This is the principal annual symposium that updates participants on broad, interdisciplinary issues including risk assessment guidance, current developments to improve modeling, exposure assessment, uncertainty analysis, risk management approaches, and risk communication. The 1998 symposium will include a third-day session, which will focus on childhood risk issues. Further information can be obtained by contacting Anderson (703-684-0123 or elanderson@sciences.com).

Publications Committee

The Editorial Board for *RISK ANALYSIS: An International Journal*, the official journal of the Society for Risk Analysis includes:

Editor-in-Chief: Curtis C. Travis

Area Editors:

Engineering: Vicki M. Bier, University of Wisconsin

Environmental & Health Risk Assessment: Paul F. Deisler, Jr.

Social and Decision Sciences: Detlof Von Winterfeldt, Decision Insights, Inc.

Editorial Board:

Lee R. Abramson, Nuclear Regulatory Commission

Elizabeth L. Anderson, Sciences International, Inc.

George Apostolakis, Massachusetts Institute of Technology

Donald G. Barnes, U.S. Environmental Protection Agency

Lawrence Barnhouse, ChemRisk, Division of McLaren/Hart

Dennis C. Bley, Buttonwood Consulting, Inc.

Ann Bostrom, Georgia Institute of Technology

Thomas Burke, Johns Hopkins School of Public Health

David E. Burmaster, Alceon Corporation

Robin Cantor, LECC

Gail Charnley, The Weinberg Group

Caron Chess, Rutgers University

Roger Cooke, University of Delft

Louis A. Cox, Jr., Cox Associates

Alison Cullen, University of Washington

John S. Evans, Harvard School of Public Health

William Farland, U.S. Environmental Protection Agency

Adam Finkel, OSHA

Baruch Fischhoff, Carnegie Mellon University

Ann N. Fisher, Pennsylvania State University

H. Christopher Frey, North Carolina State University

B. John Garrick, PLG, Inc.

David W. Gaylor, National Center for Toxicological Research

John D. Graham, Harvard University School of Public Health

Yacov Y. Haimes, University of Virginia

Dale B. Hattis, Clark University

Saburo Ikeda, University of Tsukuba

Sheila Jasanoff, Cornell University

David H. Johnson, PLG, Inc.

Stanley Kaplan, Bayesian Systems, Inc.

Roger E. Kasperson, Clark University

Nancy Kraus, Interstudy

Daniel R. Krewski, University of Ottawa

Howard C. Kunreuther, University of Pennsylvania

Lester B. Lave, Carnegie Mellon University

Joanne Linnerooth-Bayer, IASA

Paul Locke, Environmental Law Institute

Ragnar Lofstedt, University of Surrey

Douglas E. MacLean, University of Maryland

Torbjorn Malmfors, Malmfors Consulting Ab

Donald R. Mattison, University of Pittsburgh

Roger McClellan, Chemical Industry Institute of Toxicology

Thomas E. McKone, University of California

M. Granger Morgan, Carnegie Mellon University

Ali Mosleh, University of Maryland

Junko Nakanishi, Yokohama National University

D. Warner North, Decision Focus, Inc.

Timothy O'Riordan, University of East Anglia

David Okrent, University of California

Nestor Ortiz, Sandia National Laboratory

Harry J. Otway, Los Alamos National Laboratory

Elisabeth Paté-Cornell, Stanford University

Dennis J. Paustenbach, ChemRisk, Division of McLaren/Hart

Christopher Portier, NIEHS

Paul Portney, Resources for the Future

Peter Preuss, U.S. Environmental Protection Agency

Paul S. Price, ChemRisk, Division of McLaren/Hart

Ortwin Renn, Center of Technology Assessment

Lennart Sjoberg, Stockholm School of Economics

Paul Slovic, Decision Research

V. Kerry Smith, Duke University

William E. Vesely, SAIC

Chris G. Whipple, ICF Kaiser Engineers

Jonathan Wiener, Duke University Law School

Richard Wilson, Harvard University

Lauren Zeise, CAL/EPA/RCHAS

Rae Zimmerman, New York University

Public Policy Committee

Gail Charnley, Past Chair

Regulatory Reform Symposium

On 19 December the SRA Public Policy Committee hosted a symposium in Washington, D.C., titled "Regulatory Reform: Will It Happen in 1998?" The symposium was one of a series that addresses risk policy issues and that is aimed at helping to fulfill the Society's goal of fostering and promoting the knowledge and understanding of risk analysis and its applications, including the policy, social, and economic implications of risk issues. The series is cosponsored by SRA and the Risk Education Project of the American Chemical Society.

Four speakers expressed their views on S. 981, the Regulatory Improvement Act, introduced in June 1997 by Senators Fred Thompson and Carl Levin. The bill includes provisions for economic analysis, risk analysis, and peer review. It is the latest in a series of bills intended to promote smarter, more effective, and more efficient regulations by improving the way agencies make regulatory decisions. While many believe the bill can accomplish that, others believe that the bill is based on false premises and will lead only to paralysis by analysis.

The background and nature of the bill was described by the first speaker, Linda Gustitus, staff director and chief minority counsel for the Senate Governmental Affairs Committee. She noted that the bill is based to a great extent on over 20 years of

efforts by the Governmental Affairs Committee to improve the Administrative Procedures Act, all of which died painful deaths. Its basic requirements are that benefit-cost analyses be performed for major rules, defined as those expected to have an economic impact of \$100 million or more, and that the agency promulgating major rules clarify and defend why it chose the regulatory alternative that it did. In many respects, the bill reflects the provisions of President Clinton's Executive Order 12866 on regulatory planning and review. The bill is not intended to replace the need for good judgment and the agencies' ability to decide when and how to regulate. What it does do is encourage agencies to "think outside the box" of traditional command-and-control approaches to regulation and promote decision-making transparency. A revised bill will be introduced in early 1998 that will reflect changes made as a result of extensive meetings with numerous stakeholders.

The second speaker was Dr. Robert Litan, Director of the Economics Studies Program at the Brookings Institution. Litan defended the bill, describing it as a "no-brainer" and pointing out that it essentially codifies existing practices. He does not believe that the bill's provisions for benefit-cost analysis will lead to greater "paralysis by analysis" because such analyses are already done in many cases and because it is reasonable to require that some thinking be done about a rule's potential impacts before it is passed.

Litan was followed by Frank Mirer, Director of the United Auto Workers Health and Safety Department. Mirer believes that S. 981 reflects a 10-year trend toward increasing the analysis and administrative burden required for health and safety rules. While he agreed that the regulatory process is broken, he pointed out that you can't fix a Chevy with parts from a Mack truck. We already suffer from paralysis by analysis, as evidenced by the long list of chemicals that, after many years of debate, still don't have occupational exposure standards. He stated that the peer-review requirements in the bill won't lead to greater transparency and less bias because the peer review process is unbalanced and dominated by industry-biased reviewers. The bill is focused on health effects and its provisions don't readily apply to safety standards. In general, Mirer asserted, the bill will lower standards and safety and health requirements and serves only the bad, over-regulation paradigm.

The final speaker was Paul Noe, Counsel for Chairman Fred Thompson on the Governmental Affairs Committee. Noe defended S. 981, emphasizing that regulation is very much a perception issue and that there is a need for greater transparency in the regulatory process. He believes that the bill will allow agencies to move forward in the face of uncertainty and that using better science, economics, and analysis will not always lead to less stringent standards; more stringent standards could also result. Good analysis can reveal problem areas and help to target resources. He stated that we need a more rational way to set priorities across agencies. Setting priorities and targeting the greatest risks would save billions of dollars yearly, and we should all care about eliminating waste in the system. Noe expects the bill to go to markup and receive floor consideration in early 1998.

A lively audience discussion followed on the nature of the changes in the bill that have been made in response to testimony and on the likelihood that the bill would lead to more analysis and, if so, whether that analysis would produce smarter and more effective regulations or stultify the process altogether.

Endocrine Disruptors Symposium

Jack Fowle, Chair

The SRA Public Policy Committee cosponsored a symposium with the American Chemical Society's Risk Education Project in Washington, D.C., on 20 February. The topic, "Endocrine Disruptors: Making Sound Policy in the Face of Uncertainty," drew a crowd of about 80 people. Over one-third of the participants were hill staffers.

Dr. Derek Guest, Director of Health, Safety, and Environmental Regulatory Issues for the Eastman-Kodak Company, moderated the symposium. He reminded the audience of the endocrine disruptor testing requirements in the Food Quality Protection Act and the Safe Drinking Water Act, both passed in 1996. By the year 2000 the Environmental Protection Agency (EPA) is supposed to have a screening and testing program in place. He noted that this is a huge mandate for EPA, given how little experience there is with respect to understanding endocrine disruption. To its credit, EPA anticipated this issue and held three workshops focusing on endocrine disruption effects in wildlife prior to passage of the 1996 screening and testing requirements.

Guest also noted that EPA established an interdisciplinary Endocrine Disruption Screening and Testing Advisory Committee (EDSTAC) to define the issues and to help EPA plan the screening and testing program. A fundamental question challenging the EDSTAC, EPA, and others is just what do we mean by an endocrine effect.

Guest sensed that EDSTAC has reached a tentative consensus on what to do about prescreening, prioritization, and tier 1 and tier 2 screening tests. He further sensed that the selection of dose levels to require in the testing, and what to do after the tier 2 test results come in, are areas that EDSTAC has yet to resolve. His bottom line was that even after consensus is reached from a scientific perspective about how well existing tests suit the task and what dose levels to require for testing, EPA will still have to make policy decisions about how to proceed.

Four speakers followed Guest. The first two talked about the broad scientific aspects of endocrine disruption from a wildlife and then a human health perspective. Two additional speakers "debated" the magnitude of the problem and the proper way to go about a screening and testing program.

Dr. Theo Colborn, Wildlife and Contaminants Program Manager at the World Wildlife Fund, noted that the first indication of endocrine disruption occurred in the 1970s when a sizable collection of papers showed that a large number of animals around the Great Lakes experienced reproductive problems. These seemed to be caused by exposure to organochlorine chemicals in the fish and other aquatic organisms that served as food. And as one moved inland the effect seemed to disappear.

In the 1990s, the United States and Canadian International Joint Commission revisited the issue to see if the pollution prevention programs put into place since the 1970s were reducing the problem. Their findings were that little improvement had occurred, and that the aquatic food chain was still contami-



Dr. Derek Guest

nated with chemical substances that caused a wide variety of effects in hormonally responsive tissues.

Colborn said that the universe of chemicals capable of causing endocrine disruption is larger than originally thought. Organochlorinated compounds have most frequently been reported as causing endocrine disruption, but recently other classes of chemicals, whose structures don't look like hormones or other estrogenic chemicals, have been reported to have estrogenic properties, including plastic monomers and low molecular weight polymers and fire retardants. Both the organochlorines and the newer classes of substances which seem to have hormonal properties are widely distributed in the environment (e.g., PCBs in beef and in albatrosses that feed in the mid-Pacific and plasticizers in fish, birds, monkeys, and seals).

Colborn believes that we do know enough to take action now, given the exquisite sensitivity of mouse cells in laboratory tests to hormones, like estradiol, and the fact that a similar effect is seen in human fetal tissue. Also, in a study of mothers who ate fish from Lake Michigan, and whose children were exposed in utero, Colborn noted that various effects were observed after birth, such as memory loss at age 4, drops in IQ at age 11, etc. She concluded her talk by noting other evidence of concern,



Dr. Theo Colborn

such as the fact that the rate of males born with hypospadias doubled in the United States between 1970 and 1993.

Dr. Paul Foster, Director for Research in Endocrine, Reproductive, and Developmental Toxicology at the Chemical Industry Institute of Toxicology, opened his talk by noting that his task was to help set the stage for an understanding of how science can help shed light on endocrine disruption, and he wanted the audience to know that the wide array of changes seen in male reproductive health (e.g., increased testicular cancer, decreased sperm production, increases in cryptorchidism, and hypospadias) may have a biological link that can be described by a unifying hypothesis developed by Richard Sharpe and Niels Skakkebaek. He was careful to stress that this is just a hypothesis and not fact, and he went on to note that there has been no report of any environmental chemical causing any adverse reproductive effect in a human.

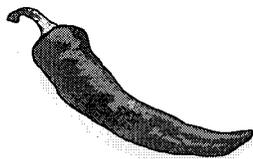


Dr. Paul Foster

Foster said that a key point to remember is that the default state in mammals is the female state. The sex regulating hormone gene on the Y chromosome (SRY) triggers a cascade of events that ultimately leads to maleness.

In thinking about designing tests for screening and testing for endocrine disruption, Foster reminded the audience that while the reproductive alterations occur in utero, many of the

1998 Annual Meeting: Call for Papers—Deadline 15 May



The 1998 Annual Meeting will be at the Hilton South Mountain in Phoenix, Arizona, 6-9 December. With the theme "Assessing and Managing Risks in a Democratic Society," the meeting will highlight the increasingly important influence that the principles of democracy are having on how risks are characterized, how decisions are made about managing risks, and how those trends are affecting the scientific basis of risk analysis.

Symposia: Proposals for symposia are to be submitted by **15 May 1998**, on forms available from the Secretariat, to the SRA Secretariat (see masthead) for forwarding to the Program Committee for approval and scheduling.

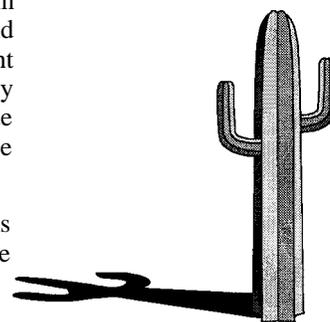
Workshops: The Conferences and Workshops Committee is accepting proposals for Workshops. A syllabus and budget must be submitted and sent by **15 May 1998** to the Conferences and Workshops Committee, SRA Secretariat.

Exhibits: There will be an exhibition of risk products and services at the Annual Meeting. For further information on exhibiting, contact Lori Strong or Sue Burk at phone: 703-790-1745, fax: 703-790-2672.

Book Exhibit: For \$50 per title, books will be displayed and each attendee will be provided information through our list of publications. The list will include prices, any discounts that may be offered, and ordering information. For more information or book reservation forms, contact Lori Strong at phone: 703-790-1745, fax: 703-790-2672.

Preliminary Program: Preliminary programs will be mailed to members of the Society, as well as to those non-members whose abstracts have been accepted. Final programs, containing the abstracts, will be available at the Meeting in December. Preregistration and hotel reservation materials will be mailed as a part of the Preliminary Program.

Session Types: Presentations are expected to be approximately 60% oral and 40% posters.



effects (e.g., sperm count) can't be measured until much later. In addition, development occurs in a sequence of events throughout gestation. Dosing over shorter periods of time during this process may not pick up certain effects. If you look at the tests of today, none is up to the task. Screening tests use cells in vitro. The standard embryo fetal development study in rats calls for dosing only during a limited time during development. The multigeneration test overcomes these limitations, but is costly (about \$500 K), and it takes a year or more before the results become available. Also the study is done in rats, and not people, so the results must be extrapolated, and absence of evidence does not mean evidence of absence.

Dr. Frederick vom Saal, Professor of Reproductive Biology and Neurobiology at the University of Missouri, Columbia, focused on the need for new approaches to test environmental hormones, using dose levels much lower than those traditionally used for toxicology studies. His thesis is that standard toxicity tests use high doses, up to ranges where cell death occurs, and look for no effect levels from which safe levels of exposure are calculated. This is not appropriate for hormonal effects. Vom Saal believes that the standard assumptions about the unexposed state being below the no-effect level is false. For hormones, one starts above the effect level and any additional exposure causes perturbation in the fetus. Thus, studies should be conducted using doses in the range where effects begin.

The final speaker was Dr. James Lamb, Vice President for



Dr. James Lamb

Scientific and Technical Services at Jellinek, Schwartz, and Connolly, Inc. He cautioned the audience to bear in mind the difference between "cause and effect" and "hypothesis." He noted that the right question to ask of toxicology is "does this chemical cause a toxic effect?" and not "we have seen a toxic effect, can we find the chemical that caused it?"

Lamb also noted that toxicologists usually only have a few data points from which they extrapolate dose-response curves. He predicted that the arguments about the significance of observed effects will occur more frequently because as toxicological tests become more and more refined, additional biological changes will be measured. Lamb noted that toxicologists don't really know what happens below the NOAEL and whether or not the biological changes observed in this range are significant. He closed his presentation by emphasizing again that biological responses to environmental hormones can be blocked by barriers to absorption and by metabolism and excretion, etc.

Several questions were posed by the audience. The key seemed to be that while the speakers had made a good case for the uncertainty surrounding endocrine disruption, it was not clear what the sound policy response should be. Colborn said that the precautionary principle should apply. Guest asked if anyone from EPA was in the audience, and, if so, would they offer an opinion.

Dr. Joe Carra rose to the challenge by saying that, in his opinion, policy makers should want scientists to provide sufficient information to help them discriminate between what chemicals we need to do something about now, which ones merit further study over the next few years, and which we do not need to worry about. This is where science and policy come together on this topic. Several panel members were heard to be in agreement. ◇◇◇

SRA Call for Awards Nominations

The Society for Risk Analysis Awards Committee invites nominations for the following 1998 awards:

The **SRA Distinguished Achievement Award** honors any person for extraordinary achievement in science or public policy relating to risk analysis.

The **SRA Outstanding Service Award** honors SRA members for extraordinary service to the Society.

The **SRA Outstanding Risk Practitioner Award** honors individuals who have made substantial contributions to the field of risk analysis through work in the public or private sectors. The 1998 award will be for the public sector.

The **Chauncey Starr Award** honors individuals under the age of 40 who have made exceptional contributions to the field of risk analysis.

The **Fellow of the Society for Risk Analysis** award recognizes and honors up to one percent of the Society's membership whose professional records are marked by significant contributions to any disciplines served by the Society and may be evidenced by one or more 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, or duration as to be a visible contributor to the advancement of the Society.

Nominees must have been SRA members for at least five years and must now be members in good standing.

Please submit nominations and a brief paragraph supporting each by **29 May 1998** to Ann Landis at the SRA Secretariat (1313 Dolley Madison Blvd., Suite 402, McLean, VA 22101).

The Awards Committee Chair is Elisabeth Paté-Cornell.



Specialty Groups

Food/Water Safety Risk Specialty Group

Debra Street, Interim Secretary

The Food/Water Safety Risk Specialty Group met on 12 December 1997 during the Society for Risk Analysis Annual Meeting. The Specialty Group's primary focus is on the particular risk analysis issues and challenges posed by hazards in the food and water consumed and used by humans and animals. Among the changes at this meeting was the addition of "water" to our name to reflect the full extent of our interests. During the meeting, the group's mission statement was edited, finalized, and approved. Attendees at the meeting also decided that bylaws for the group will be developed and put to the vote during 1998. Dissemination of bylaws and voting will be done through e-mail, facsimile, or mail.

The group agreed that its first workshop on microbial risk assessment, chaired by Charles Haas and held on the Sunday prior to the 1997 SRA Annual Meeting, was well attended and that its success warranted development of another workshop to be held prior to the 1998 SRA Annual Meeting in Arizona. Peg Coleman and Richard Williams, Jr., volunteered to develop the next workshop. One other immediate goal of the group is to develop specific sessions within the 1998 SRA Annual Meeting to present pertinent papers related to food/water safety risk.

If you would like to learn more about or join this Specialty Group, please contact Debra Street, interim secretary, at 202-205-5327 or e-mail: <das@cfsan.fda.gov>.

Risk Communication Specialty Group

Bob Griffin, Chair

About 20 people attended the SRA preconvention workshop, "Working with the News Media," sponsored by the Risk Communication Specialty Group (RCSG). The four-hour workshop was conducted 7 December by the National Safety Council's Environmental Health Center (EHC), located in Washington, D.C., and coordinated by EHC Executive Director Bud Ward, a former reporter.

The workshop featured Ward's critical analysis of the current state of reporting on environmental and risk issues; insights into the fundamentals of working with the news media, by Joseph A. Davis, NSC/EHC senior writer; and an application of risk communication research to understanding media coverage of risk, by Robert J. Griffin, director of the Center for Mass Media Research at Marquette University in Milwaukee, Wisconsin. The workshop, which was held at the request of the Specialty Group, included many tips and techniques for working with reporters and editors on risk stories.

The next evening, about 36 people, including six new SRA members, attended the annual RCSG business meeting. The group thanked outgoing Chair Steve Lewis for his work during the year and installed Griffin as Chair for 1998. Richard Rich was elected Vice-chair/Chair-elect in preconvention balloting. At the meeting, Ann Bostrom was reelected Secretary-Treasurer and Ragnar Lofstedt and Jan Temple were reelected as members of the RCSG executive committee.

Among the topics discussed at the meeting were:

- Outreach. RCSG expects to be involved in three types of outreach efforts: (1) working together with other specialty groups in response to new SRA efforts at coordination, (2) continued establishment of liaison and communication with other organizations having complementary interests in risk communication, and (3) recruitment of new members, including graduate students and new university faculty interested in risk communication.
- Continued Quality of Research. Attendees discussed various means of encouraging graduate students and university faculty, especially new faculty, to submit their risk communication research to SRA and to become active in the Specialty Group. Three constraints are the end-of-semester timing of SRA meetings, their relative cost, and the fact that many graduate students and faculty may prefer or need to submit their research to organizations which offer peer review of full papers. Among the suggested remedies were (1) establishing a special track for refereed paper sessions at SRA, (2) arranging for a special journal issue of refereed papers in risk communication based on presentations at SRA, and (3) as an intermediate step establishing a mentoring program in which volunteer members would offer young researchers advice and detailed feedback on their presentations. One attendee observed that those professionals who do not have the means to critically assess research themselves would benefit from a refereed session because they would know the papers had passed thorough review of their recommendations for practitioners.
- Better Liaisons between Researchers and Practitioners. There seemed to be a healthy integration of academics and professionals among the authors of risk communication presentations at the 1997 SRA meeting. About half of the risk communication presentations had at least one author affiliated with a university as compared to about a quarter of the meeting presentations as a whole. There is, however, still a lot of research from the broader field of communication that is not being integrated into risk communication research and practice. Ann Fisher proposed that a bibliography summarizing relevant communication research might be developed for risk communication researchers. Caron Chess has received some funding to summarize research for practitioners and plans to help them address pet peeves and separate myth from research-supported fact. Lofstedt proposed that a special double session at next year's meeting be devoted to research into trust, credibility, and cross-cultural perspectives.
- Visibility at SRA. Risk communication presentations were not grouped together as visibly and effectively on the SRA program this year as they had been the previous year when Rich had served on the SRA program committee. Rich volunteered to serve on the committee again this coming year. Members pointed out that salient risk communication sessions are especially important for recruiting new members interested in risk communication.
- Special Projects. Lewis reminded the group that small funds for special projects can often be obtained from industry. Two industry associations, for example, provided \$8,000 for the risk communication bibliography project and one company has provided some funds as an award for the best student proposal.

Risk Science & Law Specialty Group

Wayne Roth-Nelson, Chair

After guiding the Risk Science & Law Specialty Group (RSLSG) for over a year and a half, the interim officers set up an election process for the annual business meeting. Members elected a scientist, Wayne Roth-Nelson (Roth-Nelson Risk Science), as the first Chair and a lawyer, Katy Kunzer (Chemical Manufacturers Association), as the first Secretary-treasurer. Three law professors were elected to the first formal executive committee: John Applegate (University of Cincinnati), Susan Poulter (University of Utah), and Wendy Wagner (Case Western Reserve University). Two scientists were elected to round out the new executive committee: Steve Lewis (Exxon Biomedical Sciences) and Ginny Sublet (Sublet & Associates).

Bylaws were adopted, including a provision that Specialty Group membership would not be limited to Society members, as in the case with SRA Chapter members and at least one other Specialty Group. The bylaws authorize the executive committee to assess dues. Group members proposed numerous

topics for continuing education and the annual program. Among them is making the analysis of "hot" legal cases, including risk-based decisions in judicial review of regulatory issues and in adjudication of civil lawsuits, an annual RSLSG event.

Thanks to the dynamism of organizers and editors John Applegate and Wendy Wagner, our outstanding poster session, called "Risk Analysis in the Courts: A Roadmap for Risk Analysts," attracted strong interest, with 25 non-members requesting reduced-size copies of the posters. Others may contact John (john.applegate@law.uc.edu) or Wendy (wew@po.cwru.edu) for copies.

As a follow-on to our 1997 poster session, an ongoing "legal casebook" project will incorporate both the currently "hot" risk-related cases along with key historical cases, and be disseminated either in hard copy as in 1997 or at an Internet Web site (or both). The chair will investigate how the SRA Web site can accommodate not only a home page for the Specialty Group but also an electronic version of the casebook.

For RSLSG membership, contact Katy Kunzer for a registration form (kathleen_kunzer@mail.cmahq.com). ◇◇



Chapter News

Metro Chapter

The Metro Chapter (New York-New Jersey-Connecticut) held a meeting 26 February in New York on a subject that has risen in public consciousness in recent years: the safety and efficacy of infrastructure, especially urban water supply and transportation. Rare for such chapter meetings, we had the privilege of having two SRA presidents speak on the subject: Yacov Haimes, current President, and Rae Zimmerman, Past President.

The meeting attracted a diverse audience including participants from the New York City Department of Environmental Protection.

Haimes spoke on "Risk of Extreme and Catastrophic Events." He referred to the importance of risks to our infrastructure, reflected in the formation in July 1996 of the President's Commission on Critical Infrastructure Protection. Among other things, it recommends a comprehensive national policy and implementation strategy for protecting critical infrastructures from physical and cyber threats.

He also discussed the limitations of some of the traditional measures of risk, i.e., simple multiplication of probability of events and severity of consequences, and the risk of equating dissimilar risks. He argued persuasively about the need to consider multiple objectives, including separate "bands" for catastrophic events, and "indifference" zones of acceptability. These ideas are the subject of a short course on Water Resource Systems (4 May 1998), and a conference on Multiple Criteria Decision Making (8-12 June 1998), both at the University of Virginia. Call 804-924-0960 for details.

Zimmerman spoke briefly on "Integrating Social and Engineering Concerns in Risk Management." She introduced the Institute for Civil Infrastructure Systems (ICIS) at New York University, established by a landmark \$5 million grant from the National Science Foundation. The goal of the Institute is nothing short of reinventing how cities plan, implement, and evaluate their infrastructure systems. Further information can be obtained from the ICIS Web site: <www.nyu.edu/icis>.

For information on the Metro Chapter and to participate in professional development initiatives, contact President Dr. Rao

Kolluru (phone: 973-316-9300, e-mail: rkolluru@ch2m.com) or Dr. Linda Erdreich (phone: 212-686-1754).

New England Chapter

In January, SRA-New England/Boston Risk Assessment Group held a joint meeting with the Licensed Site Professionals (LSP) Association. John Fitzgerald of the Massachusetts Department of Environmental Protection discussed the results of the round robin VPH/EPH (volatile petroleum hydrocarbons/extractable petroleum hydrocarbons) analyses conducted by participating laboratories throughout the state.

Generally, LSPs accepted the VPH/EPH method for the analyses of petroleum products. There was much discussion about the quality and validation of the analytical data as well as the role/responsibility of the LSP or risk assessor in assuring that the data were correct and representative of the site contamination.

February's speakers were Ronnie Levin of the U.S. Environmental Protection Agency and Joshua Cohen of Gradient. Levin spoke about recent investigations of public drinking water systems for possible causes of gastrointestinal disease. Cohen spoke about the use of "Years of Potential Life Lost" (YPLL) to compare competing risks. He presented a case study where YPLL was used to compare cancer risks incurred by residents living near a Superfund site to risks (occupational fatality) incurred by workers employed in that site's remediation.

For new and renewed memberships in the New England Chapter, send your name, address, and affiliation to Arlene Levin, Eastern Research Group, 110 Hartwell Ave., Lexington, MA 02173; phone: 617-674-7200; fax: 617-674-2851. Dues are \$15 per year for full memberships and \$7.50 for student memberships.

For general information about the New England Chapter, contact Lorenz Rhomberg, SRA-NE President, Harvard Center for Risk Analysis, Harvard School of Public Health, 718 Huntington Avenue, Boston, MA 02115; phone: 617-432-0095; fax: 617-432-0190, e-mail: <rhomberg@hsph.harvard.edu>.

Ohio Chapter

The Ohio Chapter has maintained its 1997 slate of officers with changes only to the President-elect position and former President Ron Marnicio's decision to continue to participate in an ad hoc role as councilor for 1998. Jacqueline Patterson of Toxicology Excellence for Risk Assessment has graciously accepted the Chapter's President-elect position for 1998. Other Officers include: President: Cathy Pickrel (Ashland Chemical Company); Secretary: Hallie Serazin (Arcadis-Geraghty & Miller, Inc.); Treasurer: Steve Lutkenhoff (U.S. EPA National Center for Environmental Assessment), and Councilors: Susan Felter and Bert Hakkinen (The Procter and Gamble Company), Jeff Fisher (Wright-Patterson AFB), and Ron Marnicio (Foster Wheeler Environmental Corporation). An elections committee has been formed to evaluate current Chapter elections and nominations procedures and, if necessary, recommend changes to the process. Identification and planning of the year's activities are in progress. The first event for the year is currently in the conceptual stage. The subject for the event (to be spearheaded by Bert Hakkinen and Steve Lutkenhoff) will be children's health. The Chapter will begin circulating an informal newsletter to members to provide updates on local risk-related activities, to encourage member participation, and to solicit input on future events. The newsletter will largely be based on the meeting notes from the Chapter's Officers' meetings. If you have questions about the Chapter, please contact Cathy Pickrel at 614-790-4555 (cpickrel@ashland.com).

Philadelphia Chapter

The Philadelphia Chapter of the Society for Risk Analysis (PSRA) is gearing up for the new year. Dr. Bruce Molholt, Principal of Environmental Resources Management and Professor of Environmental Studies at the University of Pennsylvania, is acting President of PSRA for 1998.

At our last dinner meeting, in December 1997, we hosted Dr. Joel Schwartz, Associate Professor of Environmental Epidemiology at the Harvard School of Public Health, who spoke on water turbidity and public health as it relates to the Philadelphia public water supply. Following Schwartz's presentation a lively debate ensued during which a number of interesting ideas were exchanged, albeit regrettably cut short due to time constraints.

There are a few changes which will be instituted in 1998 at PSRA. PSRA typically operated on an academic year schedule, offering three dinner meetings per year. Starting January 1998, PSRA began operating on a calendar year basis, maintaining its current practice of offering at least three meetings per year. The reason for this shift is to coordinate the Philadelphia Chapter with the National Society for Risk Analysis (SRA) organization. The SRA (national) membership application form now has a check-box for SRA members to elect additional membership to the Philadelphia Chapter. You may join the Philadelphia Chapter by checking the appropriate box on the national SRA form. Alternatively, you may join PSRA directly by contacting the PSRA Secretary/Treasurer for more information at 610-524-3500.

Membership dues for PSRA are now \$20 annually. Dinner meetings will remain \$20 for members, but will increase to \$30 for nonmembers. It became necessary to increase the membership dues and nonmember dinner fees to cover the increased

costs associated with the dinner meetings sponsored by PSRA.

We are looking forward to a number of interesting and stimulating presentations and discussions in 1998. Coming up this April, PSRA is lining up a panel to present the latest information on the situation in Toms River, New Jersey, where there are ongoing investigations into the possible link between increased childhood cancer cases and contaminants in the public drinking water supply. Further information on this panel discussion will be forthcoming.

Other interesting events are also in the works. So please join PSRA for the 1998 season!

Research Triangle Chapter

Annual Conference

The Research Triangle Chapter (RTC) will sponsor its annual conference on 26-27 March 1998 at Duke University. This year's conference will debate whether special interests control the politics of risk management, and if so what should be done to improve the formulation of risk policy. Although modern political theory teaches that the legislative process tends to be dominated by concentrated special interests, the emergence of modern health and environmental regulation may be a case of the diffuse general interest surmounting the concentrated special interests. Can interest group theory account for risk regulation, or do we need a new theory of politics? And to the extent that special interests (on any side) do distort risk management, do we need a better Congress—fundamental reform of the lawmaking system—to get better risk policy?

The keynote address will be delivered by Mancur Olson, author of the landmark book *The Logic of Collective Action*. Featured speakers will include Marc Landy, Shep Melnick, Mike Munger, Robert Percival, Chris Schroeder, and Rena Steinzor. Commenters will include Jay Hamilton, Don Hornstein, Meg McKean, Paul Portney, Steve Shimberg, Kerry Smith, and Greg Wetstone.

The symposium will be held jointly with the Third Annual Cummings Colloquium on Environmental Law at Duke University. For further information and a registration form, see the conference Web site at <<http://www.law.duke.edu/news/cummings.html>>, or contact the Colloquium Director and current SRA-RTC President, Jonathan B. Wiener, at <wiener@faculty.law.duke.edu>.

Student Travel Award

In December the RTC awarded its annual Student Travel Award for a graduate student at an area university to attend the National SRA Annual Meeting. The award is designed to recognize and provide exposure for outstanding graduate student research from the Research Triangle Area. This year's award winner was Elise Jackson of the UNC Curriculum on Toxicology and CIIT, whose paper title was "Inhibition of Cytochrome P450 2E1 Decreases, but Does Not Eliminate, Genotoxicity Mediated by 1,3-Butadiene."

Monthly Workshops

The RTC continues to sponsor its monthly workshops. The workshops in the 1997-98 season included:

September: Martin Clauberg, EnSafe, on "Multimedia Modeling for Environmental Decisionmaking."

October: Richard Whisnant, Linda Rimer, Michael Shore, and Ruth A. Strauss, all of the North Carolina Department of Environment and Natural Resources, on "The North Carolina

Risk Assessment Framework: A Funny Thing Happened on the Way to Technical Improvements.”

November: Thomas E. McKone, Lawrence Berkeley National Laboratory and the University of California at Berkeley; F. Owen Hoffman, SENES Oak Ridge, Inc.; and Wayne Ott, Stanford University, on “Uncertainty and Environmental Policy.” This event was a special statewide teleconference moderated by H. Christopher Frey, North Carolina State University.

February: Student presentations: Elise Jackson, UNC Curriculum on Toxicology and CIIT, “Inhibition of Cytochrome P450 2E1 Decreases, but Does Not Eliminate, Genotoxicity Mediated by 1,3-Butadiene”; and Ken Harrison, NCSU Environmental Systems Analysis Program, on “Integrating Uncertainty, Variability and Observations on Outputs with Bayesian Monte Carlo.”

March: Gil Veith, EPA, on “The Role of Epidemiology in Regulatory Risk Assessment: an Ecological Perspective.”

Further Information

For the latest on RTC activities and officers and forms for new memberships, please visit the RTC Web site at <<http://www4.ncsu.edu/~frey/rtsra.html>>, or contact 1998 RTC President Jonathan Wiener at <wieners@faculty.law.duke.edu> or 919-613-7054.

Lone Star Chapter

The Lone Star Chapter would like to recognize outgoing President, B.C. Robison (ERM-Southwest, Inc.) who led the Chapter through an exciting year in 1997 with expanding membership and activity across the state, including the initiation of an annual Chapter conference and banquet. The Chapter got off to a good start in 1998 with its first meeting in Houston on 11 February under the direction of the Chapter's new President, Laura Plunkett. Anne Sweeney of the University of Texas School of Public Health, Department of Epidemiology, presented “Revisiting Agent Orange: Could Genetic Susceptibility Explain Old Contradictory Findings.” The presentation outlined a proposal for additional research into the incidence of birth defects related to Agent Orange exposure.

Upcoming events for the Chapter in 1998 include officer elections in March, a quarterly meeting to be held in May either in Austin or College Station, and the 2nd Annual State Conference to be held in Houston on 16 October. The keynote speaker for the Conference will be John Graham of the Harvard Center for Risk Analysis. Chapter members will be receiving more information by mail in the near future. Information on upcoming events will also be posted on the Lone Star Chapter Web page at <<http://members.aol.com/sralsc>>. For more information on any of these events or on Chapter membership please contact Laura Plunkett at 281-493-5702. ◇◇



Member News

Warner North

Dr. Warner North was the 1997 recipient of the Ramsey Medal from the Decision Analysis Society, which is a part of the Institute for Operations Research and the Management Sciences. The Ramsey Medal is the highest award of the Decision Analysis Society, and its presentation to Dr. North recognized his work on environmental risk issues. The medal is named in honor of Frank Plumpton Ramsey, a Cambridge University mathematician whose 1926 essay, “Truth and Probability,” helped establish the foundations of decision analysis.

North served as president of SRA in 1991-92, and he has served on numerous committees of the National Research Council and EPA Science Advisory Board. North was a founder and senior vice president of Decision Focus Incorporated (DFI), which has recently merged with Aeronomics of Atlanta, Georgia, to form DFI/Aeronomics, a 250-person consulting company providing assistance to clients facing complex decisions in the face of uncertainty.

Rae Zimmerman

Rae Zimmerman, SRA Past President (1997), is the Director of the new Institute for Civil Infrastructure Systems (ICIS) located at New York University's Robert F. Wagner Graduate School of Public Service. The Institute, which is national in scope, is supported and funded by the National Science Foundation at a level of \$5 million over 5 years. Three partner universities are the engineering programs at Cornell University, Polytechnic University of New York, and the University of Southern California.

The purpose of the Institute is to structure the process of urban infrastructure planning and management in order to integrate user and community needs and values, including the

reduction of risks to individuals served and the communities that house these facilities and services. To accomplish this, the Institute will build networks across disciplines and stakeholders to promote new paradigms for infrastructure research and measurement, education, and community awareness using the core concept of sustainable infrastructure.

Rao Kolluru

The *Risk Assessment and Management Handbook for Environmental, Health, and Safety Professionals* (McGraw-Hill, 1996), edited/authored by Rao Kolluru, Steve Bartell, and other members of SRA, is being published in Chinese, Japanese, and Spanish. Negotiations are also underway to publish the book in Russian. The book has been widely adopted for interdisciplinary programs on many continents.

Rao Kolluru's newest book, *In Quest of the Infinite*, is a combination of fact and fiction (perhaps not all that different from the Risk Handbook). It is a metaphysical book that combines science and spirituality. The book (ISBN 0-9653480-1-6) will be available in May 1998 from Diane Publishing, phone: 800-782-3833, fax: 610-499-7429.

David J. Ball

David J. Ball, formerly Director of the Centre for Environmental & Risk Management at the University of East Anglia, is now Professor of Risk Management at Middlesex University, c/o School of Health, Biological & Environmental Sciences (HEBES), Middlesex University, 10 Highgate Hill, London N19 5ND, UK, telephone +44 (0)181 362 6640, fax +44 (0) 181 362 6299, e-mail: <D.Ball@mdx.ac.uk> and <david.ball@paston.co.uk>. ◇◇



RISK newsletter
is published by
the Society for
Risk Analysis

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Deadline for RISK newsletter submissions

Information to be included in the **Second Quarter 1998** SRA RISK newsletter, to be mailed at the beginning of July, should be sent to the Editor at the address above no later than **20 May**.



Advertisements

Risk Assessor

TRC Environmental Corporation is currently seeking a highly qualified and motivated candidate possessing an M.S. or Ph.D. in toxicology, public health, or environmental health sciences with one to three years of experience in conducting human health and environmental risk assessments. Experience in performing such assessments under various federal and state programs (e.g., Superfund, RCRA, MCP) is preferred. Candidates should be skilled in written and oral communication, as well as proficient in current word processing and spreadsheet programs (WordPerfect 6.1 and Lotus 123 preferred). Qualified applicants should submit their résumé and salary history to TRC Environmental Corporation (RISK), Attn: Ms. Kathleen Bilodeau, 5 Waterside Crossing, Windsor, CT 06095, or fax to 860-298-6380. An Equal Opportunity Employer, M/F/D/V.

RISK newsletter advertising policy

Employment Advertisements: Organizations may purchase space for advertisements of employee openings at a cost of \$250 for a 3.25-inch-wide by 3-inch-high column in 10 point Times type with 11 point leading. The column length of an ad may be increased beyond 3 inches at a cost of \$100 per inch. Camera-ready ads are accepted. Individual members of SRA may place in the RISK newsletter, at no charge, an advertisement seeking employment for themselves as a benefit of SRA membership. The advertisement must fit within a 3-inch-high column.

Books, Software, Courses, and Events: Advertisements for books, software, courses, and events will be accepted at a cost of \$100 per inch in a 3.25-inch-wide column in 10 point Times type with 11 point leading.

The RISK newsletter is published four times a year. Submit advertisements to the Editor, with billing instructions, by 1 March for the First Quarter issue (April), 1 June for the Second Quarter issue (July), 1 September for the Third Quarter issue (October), and 1 December for the Fourth Quarter issue (January).

Thank You to SRA Sustaining Members

The Society for Risk Analysis gratefully acknowledges the financial contributions of the following sustaining members:

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