

RISK *newsletter*

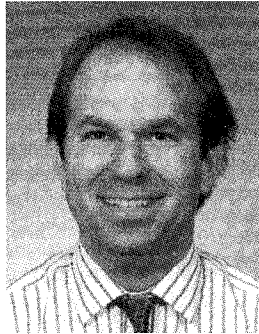
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Larry R. Froebe



P. J. "Bert" Hakkinen



Harlee S. Strauss

Froebe, Hakkinen, Strauss To Receive SRA's Outstanding Service Award

Three SRA members who have made significant contributions to their local chapters and to the Society at large are the recipients of the Society for Risk Analysis' 1996 Outstanding Service Award.

Larry R. Froebe

Larry Froebe is recognized for his work on several major projects of the SRA Southern California Chapter. In 1990 he founded the chapter's newsletter, *Risk Resources*, and served as its first editor. The following year he served on the organizing committee of the first Probabilistic Safety Assessment and Management conference (PSAM-I), which began as a chapter project. In addition, he has served as a chapter councilor and as the president (1995-96), initiating the Building Bridges and the Collaborating Organizations programs that united the chapter with other organizations.

On the national level, Froebe's proposals have resulted in several promotional tools, including the SRA meeting banner, podium drape, and paper-weight appreciation gift.

Based in Irvine, California, Froebe specializes in human health risk assessments for environmental decision making.

P. J. "Bert" Hakkinen

Bert Hakkinen, an SRA charter member, is honored for his work as a key organizer of major projects of the SRA Ohio Chapter, the SRA Exposure Assessment Specialty Group, and the national Society. He has served as president and councilor of the Ohio Chapter and worked with other members (particularly key members Steven D. Lutkenhoff and Ronald J. Marnicio) to launch the chapter's RiskWare '90 exhibit and to organize a symposium on risk resources on the Internet for the 1995 SRA Annual Meeting in Hawaii. RiskWare '90 brought together users and creators of risk analysis software and databases and led to similar exhibits at SRA annual meetings.

One of Hakkinen's major contributions to the SRA Exposure Assessment Specialty Group was proposing the idea for a reference and textbook on

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SRA, ISEA Holding Joint Annual Meeting

The Society for Risk Analysis and the International Society of Exposure Analysis (ISEA) will hold a joint annual meeting at the Fairmont Hotel in New Orleans, Louisiana, beginning Sunday, December 8. The meeting, which will end on Wednesday evening for SRA and at noon on Thursday for ISEA, has attracted a record number of abstracts—more than 500. The meeting's theme is "Risk Assessment and Risk Management: Partnerships Through Interdisciplinary Initiatives."

"This theme underscores a major thrust of SRA, with the risk management area drawing the largest number of sessions," said Rae Zimmerman, SRA's president-elect and Annual Meeting Committee chair. "Overall, the conference will cover a rich diversity of themes and include many interdisciplinary papers."

"One of the interdisciplinary initiatives that will be emphasized at the joint meeting is the link between exposure assessment and risk analysis—both assessment and management," said Thomas E. McKone, ISEA's Technical Program Committee chair for the meeting and councilor for both societies. "This conference unites people working in risk assessment and exposure assessment to exchange information and define cross-disciplinary research efforts. There will be a strong focus on exposure measurements, exposure assessment methodology, results of current research, and regulatory applications."

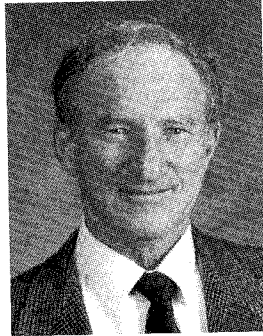
The SRA specialty groups have played a large role in organizing the 1996 Annual Meeting, said Zimmerman, who carefully chose representatives for the program committee to reflect those groups. McKone also credits

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Kaplan Receives SRA's 1996 Distinguished Achievement Award

Stan Kaplan, a leading expert in what he calls the "science of uncertainty" comprising risk, reliability, decision, and logical (Bayesian) inference, will be presented the Society for Risk Analysis' Distinguished Achievement Award at the joint 1996 Annual Meeting of SRA and the International Society of Exposure Analysis in New Orleans. A mathematician, engineer, and ex-nuclear reactor physicist, he is the third person to be presented the award for contributions to the field of quantitative (probabilistic) risk assessment (QRA), the others being his long-time associates Norman C. Rasmussen (in 1990) and B. John Garrick (in 1994).



Stan Kaplan

An early practitioner of QRA, Kaplan is a major contributor to its theory, language, philosophy, and methodology, and his methods are widely applied in the international risk and reliability community. His training in risk thinking began during his first job in industry, which was assembling pieces of uranium to determine the critical mass. Twenty years later he began formalizing, mathematizing, and quantifying the risk assessment process, beginning with risk analyses of nuclear plants and major construction projects.

For a decade beginning in the mid-1960s, Kaplan was a private consultant, the early part of which he worked with a Canadian company to determine the risks involved in building a gas pipeline from the Arctic coast through the frozen northern lands and down to the United States border. "They were much concerned with risks, and they wanted them quantified. So we began developing the qualitative risk assessment ideas into very quantitative procedures," he said.

In 1975, Kaplan joined PLG, Inc., and began working with Garrick, whom he had met when they both attended the Oak Ridge School of Reactor Technology in 1955. Together they contributed heavily to the risk analysis methodology applied to the Zion, Indian Point, and Seabrook nuclear power plants. It was the first time that a quantitative treatment of uncertainty was included in the risk analyses of nuclear plants.

Kaplan's main focus in QRA has been the handling of

uncertainty—how to quantify and express it. He uses an "evidence-based" approach, which strives to "let the evidence speak, as opposed to the personalities, positions, opinions, politics and wishful thinking." He points out that this approach "brings about clarity, communication, decision, and action where before there was confusion, conflict, waste, delay, and litigation. In other words, it creates order out of chaos."

With a B.S. in civil engineering and a Ph.D. in mechanical engineering and applied mathematics, Kaplan has applied QRA to numerous situations—in the space, defense, and oil and gas industries; in hazardous materials storage and transportation; and in manufacturing processes. He has worked with the U.S. Department of Agriculture to apply QRA to regulating the importation of animals and fruits. He has also contributed to the U.S. Naval nuclear propulsion program by analyses of the xenon stability problem, space-time kinetics, and the development of the Kaplan synthesis methods (still in use) in reactor physics.

Other contributions include the development of the discrete probability distribution (DPD) method for probabilistic calculations, the two-stage Bayesian technique for data analysis, and the "set of triplets," "probability of frequency," and "cause table" concepts in risk analysis. He is the originator of the matrix theory of event trees, the DPD approach to seismic risk analysis, and the expert information approach to eliciting/combining knowledge from experts.

In addition, he is the original architect of the RISKMAN[®] software package for interactive risk analysis, the PROODENCE code for analysis of construction project overruns, the SEIS code for seismic risk analysis, and the BARP program for graphical Bayesian reliability analysis. He has developed expert systems for medical diagnosis, nuclear plant control room assistance, and predictive maintenance of VORTAC electronic navigation equipment.

Kaplan was named an SRA Fellow in 1993 and was president of the Society's Southern California Chapter in 1987. He was one of the first Americans to take interest in and contribute to the Russian science TRIZ (the Theory of the Solution of Inventive Problems) and currently consults and teaches in this area. He is also a founder and chairman of Bayesian Systems Inc., a Washington, D.C.-based company developing diagnostic, decision, simulation, and business management software.

Outstanding Service Award (Cont. from page 1.)

residential exposure assessment. He serves on the editorial board of the resulting Residential Exposure Assessment Project (see page 5).

Hakkinen is a senior scientist in toxicology and risk assessment at the Procter & Gamble Company in Cincinnati and a lecturer on exposure and risk-related topics at the University of Cincinnati.

Harlee S. Strauss

Harlee Strauss is recognized for her work in promoting and developing the SRA New England Chapter. While serving as the chapter's 1991-92 president, she was one of the

first in the Society to see the need for a local chapter newsletter to stay in contact with members unable to attend meetings, to promote the organization, and to maintain a historical record of activities. She launched the chapter's newsletter "Back of the Envelop" in August 1991 and went on to serve as editor for the next four years.

On the national level, Strauss has served as a member of the Management Committee of SRA's Residential Exposure Assessment Project since 1993, and she was a member of the Advisory Committee for the SRA Workshop "Key Issues in Carcinogen Risk Assessment Guidelines" in 1992.

Strauss is the founder and president of the consulting practice H. Strauss Associates Inc. in Natick, Massachusetts.

SRA, ISEA Joint Meeting

(Continued from page 1.)

the SRA Exposure Assessment Specialty Group working together with the ISEA Technical Program Committee for the technical content in the exposure area.

Opening Plenary. The opening session will include welcomes by **Kristina Ford**, executive director of the New Orleans City Planning Commission, SRA President **John D. Graham**, and ISEA President **Ken Sexton**, after which **Gail Charnley**, executive director of the Commission on Risk Assessment and Risk Management, will moderate a presentation on three significant 1996 reports that will affect risk policy in the United States.

Luncheon Addresses. **Paul R. Portney**, president of Resources for the Future, a Washington, D.C.-based research and educational organization concerned with natural resources and the environment, will speak at an SRA-sponsored luncheon on Monday. **Daniel A. Vallerio**, chief of the U.S. Environmental Protection Agency's Source Apportionment and Characterization Branch of the Atmospheric Processes Research Division in Research Triangle Park, North Carolina, and chair of an endocrine disruptor exposure research team since 1994, will give an ISEA-sponsored luncheon address on Wednesday.

Evening Forum. **Scott R. Baker** of EA Engineering, Science, and Technology Inc. and **Jeanette Wiltse** of the U.S. Environmental Protection Agency will conduct a forum at 5:30 p.m., Monday, on the U.S. EPA's proposed Guidelines for Carcinogen Risk Assessment.

Roundtable Discussions. Two roundtable discussions will begin at 5:30 p.m., Tuesday. Environmental sociologist **Robert B. Gramling**, professor of sociology and director of the University of Southwestern Louisiana's Center for Socioeconomic Research, has organized one roundtable for persons engaged in risk issues in Louisiana.

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SRA Business Meeting

The Society's annual business meeting will follow the luncheon on Tuesday, December 10.

Zimmerman Leads Society

Incoming SRA President Rae Zimmerman will provide leadership for the Society for Risk Analysis to support and strengthen the Society's role in the rapidly evolving areas of risk assessment, management, and communication as policy and management tools. She will pursue multi-year planning for the Society as well to accomplish these objectives.

Zimmerman, who is a professor of planning and public administration at New York University's Wagner Graduate School of Public Service, has outlined a number of goals for the coming year:

- **Enlarge SRA's role as a resource in key risk policy debates.** "As a professional society, we need to intensify our efforts to address cutting-edge issues, in particular, the process by which risk assessment is used in decision making," she said. She also proposes "developing SRA as a vehicle to facilitate public and professional discussions of risk-based priority setting, benefit-cost analysis, comparative risk, and cumulative risks."

- **Strengthen the Society's role as a resource on risk issues.** She will continue to move the Society toward the use of the Internet to make its activities more widely available and will encourage the use of educational programs and multidisciplinary research to strengthen the professional credentials of members.

- **Promote interdisciplinary and integrated research as a basis for professional networks.** "To encourage the perspective that many risk issues are multidisciplinary, I will promote networks among risk professionals in various disciplines in academia, industry, and government to transfer knowledge among the sciences, medicine, social science, and engineering," she said.

- **Improve SRA's relationships with groups with related missions.** "I would like SRA to continue to strengthen internally, drawing closer to SRA-Europe and SRA-Japan, and to continue to foster synergistic relationships with external societies. Moreover, outreach to groups which so far have not been engaged through the Society's normal channels will be promoted."

- **Encourage student involvement in the Society.** She noted that one way the Society could increase student involvement would be to find new ways to target financial support for student participation in the annual meeting.

A charter member and former councilor of SRA, Zimmerman serves on a number of advisory boards to federal and state government. This year she was selected to serve on the U.S. Environmental Protection Agency's new Board of Scientific Counselors, which advises EPA's Office of Research and Development. She also serves on New York State environmental committees as well, and completed a term on the National Science Foundation's Decision, Risk, and Management Science Program advisory panel. She directs New York University's Summer Institute in Risk Management in Environmental Health and Protection, and currently directs the NSF-sponsored interdisciplinary research on urban infrastructure performance and an EPA-sponsored project on agricultural pesticide use. These research areas represent new opportunities for risk management.



Rae Zimmerman

SRA Membership Meeting

The SRA Membership Committee, chaired by SRA Councilor **Caron F. Chess**, will conduct its annual membership meeting at 6:30 p.m. on Monday, December 9. The meeting provides a forum for members to raise interests and concerns about the Society and provides feedback to SRA Council members.

SRA Council Meetings

The SRA Council will hold two meetings in New Orleans.

The current Council, whose members are listed in the masthead (see page 12), will meet 1-5 p.m. on Sunday, December 8. The Council with newly elected members will meet 7-9 p.m. on Tuesday, December 10.

Fenner-Crisp and Jenkins-Smith Receive SRA Awards

Outstanding Practitioner Award. Penelope Fenner-Crisp, the deputy director of the U.S. Environmental Protection Agency's Office of Pesticide Programs, is the first recipient of the Society for Risk Analysis' Outstanding Risk Practitioner Award in recognition of her excellent risk analysis work in the public sector.



Penelope Fenner-Crisp

As deputy director of the Office of Pesticide Programs, Fenner-Crisp shares with the director oversight of EPA's pesticide activities. This includes establishing tolerance levels for pesticides, such as maximum allowable levels in food; conducting special reviews of pesticides suspected of posing unreasonable risks; developing registration standards; and establishing research and monitoring needs.

During her 18-year career at EPA, Fenner-Crisp has served on many of the agency's risk-related organizations, including the Reference Dose Workgroup, the Risk Assessment Forum, the Risk Assessment Council, the Steering Committee of the Science Policy Council, and several technical committees on risk assessment guidelines.

Before assuming her current post, she served as acting deputy director of the Office of Pesticide Programs from 1994-95 and as director of the Health Effects Division of the Office of Pesticide Programs from 1989-95.

She has a B.S. degree in zoology from the University of Wisconsin in Milwaukee and a master's degree and doctorate in pharmacology from the University of Texas Medical Branch in Galveston.

Young Risk Analyst Award. Hank C. Jenkins-Smith, the director of the Institute for Public Policy and an associate professor of political science at the University of New Mexico, is the first recipient of the Society for Risk Analysis' Young Risk Analyst Award.



Hank C. Jenkins-Smith

SRA is honoring Jenkins-Smith for his research on the application of technical analyses, such as risk assessment, cost-benefit analysis, and contingent valuation, to public policy problems. Recently, he has focused on how science and scientists become involved in technical policy disputes—in particular, how scientists integrate deeply held values into scientific claims and how the public perceives scientists involved in technical disputes. He also has focused on the use of survey research to study public policy problems, measuring public and elite perceptions of policy issues such as the transportation of hazardous and radioactive materials, nuclear waste, and national security.

The results of his work have been published in his books *Policy Change and Learning: An Advocacy Coalition Approach* co-authored with Paul Sabatier (Westview Press; 1993) and *Democratic Politics and Policy Analysis* (Brooks/Cole; 1990) and in publications such as SRA's *Risk Analysis: An International Journal*.

He has an undergraduate degree in political science and economics from Linfield College in McMinnville, Oregon, and a doctoral degree in political science from the University of Rochester in Rochester, New York.

SRA 1996 Election Results To Be Announced

The Society for Risk Analysis' 1996 elections for president-elect, treasurer, and three councilors closed on November 1, the deadline for returning ballots. The new officers and councilors will be announced at the 1996 Annual Meeting and will participate in their first SRA Council meeting on December 10. The nominees were:

For president-elect (one-year term)—**George Apostolakis**, professor of nuclear engineering at the Massachusetts Institute of Technology, who is also affiliated with the institute's Operations Research Center and Program for Environmental Engineering Education and Research, vs. **Yacov Y. Haimes**, the Lawrence R. Quarles Pro-

fessor of Engineering and Applied Science and director of the Center for Risk Management of Engineering Systems at the University of Virginia.

For treasurer (two-year term)—**Robert G. Hetes**, manager of the Health Risk Assessment Program in the Center for Environmental Analysis at the Research Triangle Institute, vs. incumbent **Paul S. Price**, a supervising scientist with ChemRisk, a Division of McLaren/Hart.

For councilor (three positions, each with a three-year term)—**Scott R. Baker**, director of risk sciences and management at EA Engineering, Science, and Technology Inc., vs. **William F. Farland**, director of the U.S.

Environmental Protection Agency's National Center for Environmental Assessment; **Robin Cantor**, managing economist with Law and Economics Consulting Group and former director of the National Science Foundation's Decision, Risk, and Management Science Program, vs. **Ortwin Renn**, member of the Center of Technology Assessment in Baden-Württemberg's board of directors and chair of environmental sociology at the University of Stuttgart; and **H. Christopher Frey**, assistant professor in the North Carolina State University's Department of Civil Engineering, vs. **F. Owen Hoffman**, president and director of SENES Oak Ridge Inc.

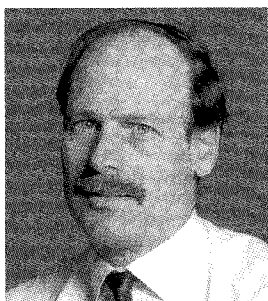
SRA, ISEA Joint Meeting *(Continued from page 3.)*

The other roundtable, chaired by **Robin Cantor**, will focus on the development and implementation of university-based programs in risk assessment and risk management.

Society Awards Plenary. SRA and ISEA will both present awards and SRA will name three new fellows at the Wednesday morning plenary. Speakers at the session will be SRA awardee **Stan Kaplan** (see page 2) and ISEA awardee **John D. Spengler**.

Spengler, who is a professor of environmental health and director of the Environmental Science and Engineering Program in the Department of Environmental Health at Harvard University's School of Public Health, will receive the annual Jerome J. Wesolowski Award, which was established in memory of a founding member and councilor of ISEA.

Spengler, widely known for his research on indoor air pollution and air pollution meteorology, has a B.S. in physics, an M.S. in environmental health sciences, and a Ph.D. in atmospheric sciences.



John D. Spengler

Member News

Lawrence W. Barnhouse, formerly of Oak Ridge National Laboratory's Environmental Science Division, is now with the ChemRisk Division of McLaren/Hart Environmental Engineering, 109 Jefferson Ave., Suite D, Oak Ridge, TN 37830, e-mail larry_barnhouse@mclaren-hart.com, telephone (423) 482-8978, fax (423) 482-9473.

Robin Cantor, former director for the NSF's Decision, Risk, and Management Sciences program, is a managing economist with the Law and Economics Consulting Group, Inc., 1600 M Street, NW, Suite 700, Washington, DC 20036, telephone (202) 973-9868, e-mail robin_cantor@dc.lecg.com, fax (202) 466-4487.

Lawrence B. Gratt of IWG Corporation has published *Air Toxic Risk Assessment and Management* (Van Nostrand Reinhold; 1996, ISBN 0-442-01188-1).

Wayne Roth-Nelson has opened a private practice as a consultant and expert witness using risk-based evidence in toxic tort litigation: Roth-Nelson Risk Science at 8663 Hollyhock Lane, Lafayette, CO 80026-8923, telephone (800) 200-0367, fax (303) 494-3785.

Milton Russell, director of the Joint Institute for Energy & Environment and of the NSF National Center for Environmental Decision-Making Research, both located at the University of Tennessee in Knoxville, has announced his retirement at the end of the year.

Sharon Sigethy, 1994 recipient of an SRA Best Student Paper Award, is an assistant environmental scientist working with human health and ecological risk assessments in the ChemRisk Division of McLaren/Hart Environmental Engineering, 25 Independence Boulevard, Warren, NJ 07059, telephone (908) 647-8111, fax (908) 647-8162, e-mail sharon_sigethy@mclaren-hart.com.

Curtis C. Travis, editor-in-chief of SRA's journal, has accepted a position with Informatica International, a professional services organization devoted to providing creative solutions to major economic, environmental, and societal problems at the international, national, and local levels. He can be contacted by telephone (423) 694-8300, fax (423) 694-2030, or e-mail traviscc@icx.net.

REAP Nears Completion

The Residential Exposure Assessment Project (REAP), which the Society for Risk Analysis initiated in cooperation with the U.S. Environmental Protection Agency (EPA) and the International Society of Exposure Analysis, with funding from the Chemical Manufacturers Association, Chemical Specialty Manufacturers Association, Responsible Industry for a Sound Environment, and the Procter & Gamble Company, is nearing completion.

More than 25 scientists have contributed to the primary product of the REAP effort, a reference textbook. The authors met in June 1996 to discuss draft chapters and the final table of contents and again on October 28-30 to facilitate completion of the text. Subject areas which the textbook addresses range from an overview of U.S. legislation relevant to products used in and around the residence, to methods for measuring or modeling potential integrated or aggregate exposures across multiple pathways and routes, to an overview of distributional data available for key residential exposure factors, such as air exchange rates.

The importance of the REAP effort has recently been re-emphasized by the Food Quality Protection Act of 1996, which requires the EPA to make a "determination of safety" with respect to potential aggregate exposures to adults and children that result from the use of pesticides in agricultural and residential settings. This determination must include consideration of anticipated dietary and all other exposures, such as drinking water and consumer products, for which there is reliable information. In addition, legislative activities and scientific interest in Europe and Japan have prompted consideration of organizing REAPs in those regions.

Quarterly SRA Forums To Begin in 1997

The Society for Risk Analysis Conference and Workshops Committee is scheduling four two-day forums in 1997—one per quarter—that will provide an opportunity for in-depth examination of topics highly relevant to the risk assessment community.

The first two forums will be held in the Washington, D.C., area. Yacov Y. Haimes of the University of Virginia's Center for Risk Management of Engineering Systems will chair the first, to be held February 10-11 on the topic "Risk of Extreme and Rare Events (with Applications to System Acquisition, Natural and Man-made Hazards, and Infrastructure Management)," and Virginia H. Sublet of the University of Cincinnati will chair the second, to be held April 27-29 on the topic "Communicating Scientific Information in the Courtroom." Elaine Faustman of the University of Washington will chair the third forum on "Biologically Based Dose Response Modeling: Fact or Fallacy?" to be held in the summer at a site to be announced. The committee is still planning the fourth forum.

Questions about the forums should be addressed to the Secretariat (see masthead) or Elizabeth L. Anderson, the Conferences and Workshops Committee chair, telephone (703) 684-0123.

The Society's Financial Status

This is the third in a series of annual reports on the Society's financial condition prepared by the SRA Financial Committee and Executive Committee. These reports provide an update of the Society's financial condition and a summary of the financial changes that occurred in 1995. Last year we reported that the Society's financial condition in 1994 was "a movement in the right direction." This year unfortunately we have to report that 1995 was a year in which financially "we lost ground." Specifically, the Society had estimated that 1995 would provide a modest net revenue of \$36,510. Based upon the final audit, the Society's expenses exceeded revenues by \$35,903 (about 10% of gross revenues), largely attributable to the annual meeting whose location represented a new venture for the Society and an outreach to SRA-Japan. Other activities contributed in combination in a smaller way, namely, new ventures associated with educational efforts, reorganization of the journal, some accounting issues, and the fact that the annual revenue generating workshop was not held. These are explained in detail below.

To help explain the recent trends in SRA's financial status, audited data from fiscal years 1993, 1994, and 1995 are graphed. The graphs present information on the major elements that make up our gross revenues and expenses, which, when combined, produce our net revenues. This information has been compiled from the treasurer's reports for these years.

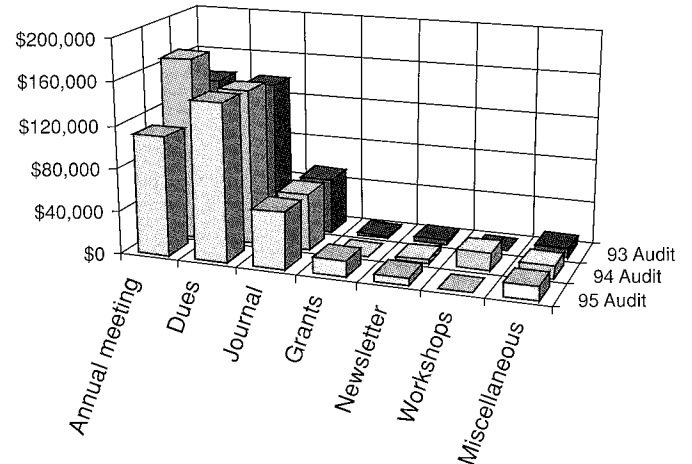
Three graphs are provided: one for revenues, a second for expenses, and a third for net revenues. To simplify the graphical presentation, several revenue items from the detailed budget categories tracked in the SRA accounting system, e.g., dues from individual members (including subscription revenues) and sustaining sponsors, were combined, and "miscellaneous" herein includes all other revenue sources not specifically identified. Similarly, expense categories were also combined: e.g., officers, councilors, and support were grouped under "Council," and "miscellaneous" includes all other expense sources not specifically identified.

Gross Revenues

The gross revenues of the Society were \$341,982 in 1993, \$399,188 in 1994, \$346,199 in 1995, and are estimated to be \$433,150 (including expected receipts of the annual meeting) in 1996. Besides these revenues, the Society received \$39,121 in 1993, \$154,932 in 1994, and \$94,514 in 1995 to fund two projects, one on residential exposure assessment and the second for guidance on Monte Carlo modeling of exposure. These funds are restricted for use on these projects and have not been included in the calculation of the Society's gross revenues, expenses, or net revenues.

The Society's gross revenues are derived principally from the dues of individual members and sustaining sponsors, journal subscriptions, and the annual meeting. The revenues for the years 1993, 1994, 1995 and 1996 are 40%, 36%, 42% and 38% (est.) for dues; 15%, 13%, 15% and 13% (est.) for journal subscriptions; and 40%, 47%, 32% and 42% (est.) for the annual meeting and workshops. In 1995, the relatively small amount of income from the annual meeting raised the percentage of gross revenues from dues and the journal. In 1996 the Society increased the dues by \$10 which increased the relative contribution of dues for this year. Revenues from workshops during calendar year 1994 were much greater than those in 1993 or 1995. The reason for this is that the

Gross Revenues



midyear conference usually held by SRA was not held in 1993 or 1995. A workshop was held in 1996 and is anticipated to make a significant contribution to the Society's net revenues for that year.

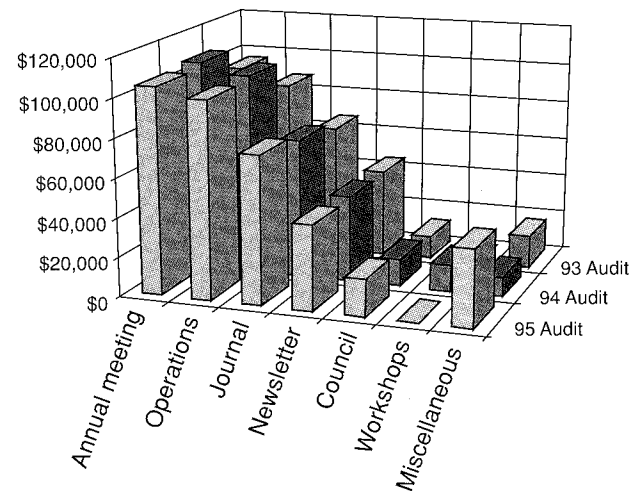
Expenses

The expenses of the Society were \$321,822 in 1993 and \$362,657 in 1994, rose to \$382,102 in 1995, and are expected to rise slightly to \$389,250 in 1996. Increased expenses in 1994 were due to the annual meeting expenses. The modest increase in 1996 is also due to increases in the annual meeting that reflect the high level of attendance anticipated. The reasons for the increased expenses in 1995 are discussed in detail below.

The Society's primary yearly expenses consist of three parts:

- *Management & Operations* provided by the Secretariat (i.e., Burk & Associates Inc.), which includes salaries, salary-based charges, rent, equipment, insurance, bonds, taxes, and other direct costs (e.g., committee operations; organizational

Expenses



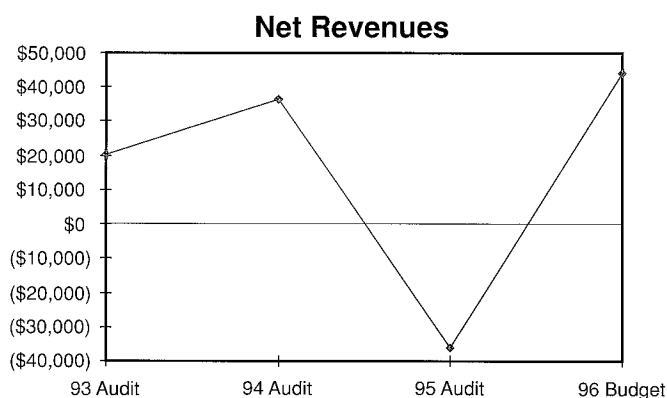
support; and Society direct costs such as postage, printing, audit and legal, telephone and duplication), representing for the subject years 36%, 35%, 41%, and 40% (est.), respectively, of the Society's total expenses. The increases in the percentage for management and operations over this period are due to the decrease in other costs to the Society and increases in the Society's direct costs. The Secretariat's management fee accounts for less than two-thirds of the management and operations costs and has been roughly constant for the last four years.

- *Publication* costs for the journal are 21%, 20%, 20%, and 19% (est.), respectively, of the total expenditures, and costs for the newsletter accounts for 14%, 12%, 11%, and 10% (est.), respectively.

- *Annual Meeting* and workshop expenses for the subject years were 30%, 30%, 28%, and 33% (est.), respectively, of the total expenditures.

Net Revenues

The net revenues of the Society have increased over 1992-1994 but decreased in 1995. The net revenues (losses) of the Society were \$20,685 for 1993, \$36,531 for 1994, and (\$35,903) for 1995. Net revenues for 1994 were higher than 1993 because of the high revenues from the 1994 annual meeting. The factors causing the net losses in 1995 are discussed below.



Finances for 1995

There are a fairly large number of specific factors that resulted in losses in 1995; however, they can be separated into three areas: the annual meeting, loss of anticipated income, and higher than budgeted costs for the operation of the Society. As discussed in last year's report, the annual meeting and associated workshops are a major source of income to the Society. In 1995 we budgeted for a net revenue of \$41,000 from the annual meeting and the associated workshops. Based upon the audit of 1995, the net revenue for the meeting and workshops was \$5,857. Thus, while the annual meeting "made money," it was far less than the anticipated net revenue. There were two reasons for the lower than expected net revenue. First, attendance at the meeting was below that anticipated, and attendance at workshops was greatly below estimated levels. Although the conference had the largest number of anticipated papers, many had to be withdrawn because of government furloughs and travel uncertainties. Second, meeting costs were higher than those budgeted. The budget for 1995 was based on costs for the previous annual meetings and the costs in Hawaii were higher.

In 1995 the Society failed to realize income from several sources. Specifically, no midyear workshop was held in 1995, sustaining memberships were below the level anticipated, and Plenum Publishing Corporation provided lower royalties and higher journal office costs. None of these factors were large in and of themselves; however, in combination their effects were significant.

Finally, the budget for the costs of the Society's operation did not consider several additional factors. In 1995, the general level of Society activities increased as a result of several new ventures. A series of educational meetings for members of Congress was held, the SRA Advisory Board was created and its activities supported, and the journal was strengthened by the establishment of three associate editors. As a result of these new ventures, administrative costs such as telephone (conference calls), postage, and supplies were higher than anticipated. A number of accounting issues also adversely affected the budget. Due to a delay in printing, the cost of the 1994 membership directory was paid from 1995 funds. In addition, the use of credit cards by members to pay dues and registration fees greatly increased. These two factors together resulted in a \$12,000 shortfall. Finally, although the net cost of the newsletter decreased 9%, the decline was not as great as anticipated and resulted in higher than budgeted net cost.

Reserves

Cash reserves are those funds (in savings and investments) that remain at the end of the fiscal year after all revenues have been obtained and all bills paid. These funds are important not only to avoid difficulties with cash flow but also to provide insurance against unforeseen reversals in the financial projections of subsequent years. The financial events of 1995 are a mild example of such reversals. It is suggested that societies of our size and maturity have cash reserves equivalent to one year's operating budget. If SRA were to meet this criterion, it should have had \$389,250 at the end of 1995 (the 1996 budget of \$433,150 minus the hoped-for contribution to cash reserves of \$43,900). As of the close of 1995 (after the shortfall was subtracted), the Society's cash reserves were approximately \$90,000. The level is similar to that of two years ago. Based on the budget for fiscal year 1996, we anticipate adding an additional \$43,900 to that sum. However, that still leaves an uncomfortable distance from our target of one year's income in cash reserves.

For fiscal year 1997, the Society plans to raise net revenues in several ways. First, SRA has raised the annual dues for 1997 to \$95 as part of its three-year program to increase revenues. This will result in an increase of approximately \$18,000 in additional income. Workshops on a number of topics are being planned which should provide additional sources of revenue. Second, the Society is seeking to actively control its expenses. The Financial Committee is preparing a series of recommendations to assure that this and subsequent years' annual meetings will be on a sound financial basis. The Secretariat and the council have also committed to better control costs for travel. Finally, more realistic cost estimates are being incorporated into the 1997 budget presently being prepared for review and approval at the annual meeting in December.

Based upon these actions, and financial information currently available for 1996, we anticipate that the Society's expenses for 1996 and following years will not exceed revenues and that a substantial amount of net revenues will be added to the Society's reserves on an annual basis.

THANK YOU. The Society for Risk Analysis gratefully acknowledges the financial contributions of the following sustaining members in 1995; 1996 sustaining members will be listed in a forthcoming issue.

American Petroleum Institute
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SRA-Europe: Renn Is Section President

Ortwin Renn, a member of the board of directors at the Center of Technology Assessment in Baden-Württemberg in Stuttgart, Germany, was elected president of the Society for Risk Analysis-Europe by the SRA-Europe Executive Committee at its meeting on September 20 in Paris, France.



Ortwin Renn

Renn directs the center's Department of Technology, Society, and Environmental Economics and is also the environmental sociology chair at the University of Stuttgart. His current research topics include risk perception and communication, regional concepts of sustainable development, citizen participation in risk management, the social percep-

tion of genetic engineering, and the development of a new theoretical approach to study the social amplification of risk. He serves on the German Government Advisory Council on Global Change, the State Research Board of Baden-Württemberg, and the State Environmental Board of the Protestant Church. He is coeditor of the journal *GAI*A and a Kluwer Academic Publishers' book series on technology and risk.

Renn has an M.A. in sociology and economics and a Ph.D. in social psychology from the University of Cologne. His previous positions include an associate professorship at Clark University in Wooster, Massachusetts, where he was a senior investigator and the acting director for Clark Center for Technology, Environment, and Development. His publications include seven books and more than 50 journal articles or book chapters. An SRA member since 1988, he has served on the SRA-Europe Executive Committee since 1994 and organized the 1995 SRA-Europe Annual Meeting held in Stuttgart.

Other New Officers. The Executive Committee also elected from its membership a secretary, Lynn Frewer of the Institute of

Food Research, Reading, United Kingdom; a treasurer, Martin Brüstlein of F. Hoffmann-La Roche AG in Basel, Switzerland; an East-West information chair, Esko F. Blokker of the DCMR Environmental Protection Agency, Rijnmond, Netherlands; and a Europe-USA representative, Joanne Linnerooth-Bayer of the International Institute for Applied Systems Analysis in Laxenburg, Austria. A president-elect and a membership and fund-raising chair will be chosen at the committee's January meeting.

1997 Annual Meeting. Planners of SRA-Europe's 1997 Annual Meeting, to be held June 15-18 in Stockholm, Sweden, will issue a second-announcement brochure soon and will also place a home page on the Internet. The meeting schedule currently includes a bus tour on Sunday, June 15, to the Forsmark nuclear power plant—Sweden's final repository for radioactive operational waste since 1988; a reception Sunday evening at the City Hall, when the SRA-Europe Executive Committee will present the section's Distinguished Scientist Award; SRA-Europe's annual business meeting on Monday evening, June 16; and the annual meeting dinner on Tuesday evening, June 17.

"There is already quite a lot of interest shown for the annual meeting," says SRA-Europe Executive Committee member and Conference Director Britt-Marie Drott Sjöberg of the Stockholm School of Economics' Center for Risk Research, which is the host and principal organizer of the meeting. "The deadline for submitting abstracts is January 15."

The organizers, which also include Riskkollegiet, a Swedish Risk Academy, and the Royal Institute for Technology's Center for Safety Research, are also asking business and industry to become sponsors of the annual meeting. "The more sponsors we can attract, the more possibility we will have to invite researchers from Eastern and Central Europe," said Drott Sjöberg.

For information or to submit an abstract, contact the conference secretary, Kristina Eddon, at the Center for Risk Research, Stockholm School of Economics, Box 6501, S-113 83 Stockholm, Sweden, e-mail pks@hhs.se, fax (46) 8 30 72 25, telephone (46) 8 736 95 70.

SRA-Japan To Hold Ninth Annual Meeting

The Society for Risk Analysis-Japan has selected the theme "Risks in Urban Lifestyles and Ecosystems" for its ninth annual meeting, to be held November 21-22 in Tokyo at Sumitomo Kaijo Kasai Hoken K.K. Meeting participants will discuss the diverse risk problems relevant to urban living, the consumer society, and city disaster prevention, as well as recent trends of risk analysis problems in the ecosystem that sustains human existence. The program includes some 32 invited lectures and reports in addition to several presentations of individual research and case studies.

A special symposium will focus on the relationship between a socially acceptable risk level of hazardous chemical substances and the environmental criteria. Cosponsored by the Society for Clean Air Environment (the former Society for Preservation of Clean Air), the session is expected to attract many participants concerned about the legislative reform of Japan's "Clean Air Act."

Japan Section is expecting to publish the special Japanese and English language edition of its journal in early 1997. Some 30 papers were submitted for the volume.

U.S. Chapter News

Chicago Regional Chapter and the Argonne National Laboratory's Office of the General Manager for Environmental Sciences cosponsored a seminar held November 7 on "The Presidential/Congressional Risk Commission's Comprehensive New Risk Management Framework for Environmental Regulatory Agencies." Gilbert S. Omenn of the University of Washington's School of Public Health and Community Medicine, who chairs the Commission on Risk Assessment and Risk Management, spoke. The chapter's Web site is located at <http://www.ead.anl.gov/~web/sra/index.html>.

East Tennessee Chapter, with local chapters of the American Nuclear Society, the Health Physics Society, and the American Institute of Chemical Engineers and the [city of] Oak Ridge League of Women Voters, cosponsored a dinner meeting in September that featured guest speaker Warren K. Sinclair, president emeritus of the National Council on Radiation Protection and Measurements. He summarized the papers presented at the council's recent annual meeting, focusing his talk on dose-response relationships and the relevance of the linear hypothesis at low dosages. The chapter's Web site is located at <http://stargate.ornl.gov/stargate/sra/etsrc.html>.

Lone Star Chapter held its third quarterly meeting on September 26th in Austin, Texas. Paul F. Deisler Jr., SRA fellow, Advisory Board chair, and past president, spoke on "Comparative Risk Ranking: Lessons Learned, New Developments." The chapter is planning a meeting for mid-November in San Antonio.

Metropolitan (Connecticut-New Jersey-New York) Chapter cosponsored a symposium last April on "Emerging Microbial Threats: Public Policy Implications" (see RISK newsletter, Second Quarter 1996, page 10) that is now available on audio-visual tapes. The speakers included Joshua Lederburg, Stephen S. Morse, and Alexander Tomasz of Rockefeller University; Laurie Garrett, health and science writer for *Newsday* and *New York Newsday*; Dr. Mitchell L. Cohen of the Centers for Disease Control and Prevention in Atlanta, Georgia; and Marcelle Layton of the New York City Department of Health. To order the tapes at a cost of \$50.00 for chapter members

and \$100.00 for non-members, contact the chapter's Past President Miriam de Salegui, who organized the symposium, at telephone (212) 749-7961.

Michigan Chapter held a workshop in August on "The Internet: A Tool for Risk Analysts." Thomas Wackerman of Applied Science & Technology Inc. provided extensive, hands-on assistance for navigating Internet systems and supplied participants with references for risk information. To inquire about his course on the Internet, contact him by e-mail twacker@cheml.eng.wayne.edu or by telephone (313) 426-1200. The chapter secretary is accepting nominations for the election of new officers.

New England Chapter kicked off its 1996-97 monthly seminar series in September with Paul Weathersby, a private consultant, presenting "A Case Study of a Success with Quantitative Risk Management: Diver Decompression Systems" and Gale Hoffnagle of TRC Inc., who spoke on "EPA's New Regulations on Accidental Releases: Bhopal, Not Here!" In October, Commission on Risk Assessment and Risk Management member Norman Anderson of the American Lung Association presented "An Outsider's Inside View from the Risk Assessment and Risk Management Commission: Process and Outcome," and Ruth Bleyler of the U.S. Environmental Protection Agency, Region I, spoke on "The Risk Report: A View from the Trenches of EPA Risk Characterization." The seminar series allows working risk assessors to present projects that are either in progress or recently completed and to get feedback from a larger community of professionals, says Dale B. Hattis of Clark University, the chapter's president for a second term. Lorenz R. Rhomberg of the Center for Risk Analysis at Harvard School of Public Health is the new president-elect.

Philadelphia Chapter will sponsor three dinner meetings during its 1996-97 program year. At the meeting on December 3, Linda S. Erdreich of Bailey Research Associates Inc. in New York City will speak on "New EPA Carcinogen Risk Assessment Guidelines: How Much of a Difference Will They Make?" The remaining meetings will focus on new directions in environmental regulation and on the risks, legal and otherwise, of silicone breast implants.

Research Triangle Chapter and Duke University are cosponsoring a conference on "Risk in the Republic: Comparative Risk Analysis and Public Policy," to be held November 15-16 in Durham, North Carolina, that combines the university's Second Annual Cummings Colloquium on Environmental Law with the chapter's 1996 Annual Workshop. SRA Councilor Gail Charnley of the Commission on Risk Assessment and Risk Management will give the opening address, and U.S. Department of Energy Under Secretary Thomas Grumbly, will give the keynote address. Featured speakers will include SRA President John Graham of Harvard Center for Risk Analysis and former SRA presidents Lester Lave of Carnegie Mellon University and Robert Tardiff of EA Engineering, Science, and Technology Inc. More information is available on the chapter's new World Wide Web site at <http://www4.ncsu.edu/~frey/www/rtesra.html>. When the chapter met in August, George Christakos of the University of North Carolina-Chapel Hill spoke on the "The Role of Stochastic Indicators in Site Characterization, Risk Assessment, and Remediation Analysis"; and in October, Kenneth Rudo of the North Carolina Department of Environment, Health, and Natural Resources spoke on "Hog Farms and Public Health." The chapter is presenting its first Student Travel Award for an outstanding graduate student from a Research Triangle-area university to attend the SRA Annual Meeting and to present a paper.

Southern California Chapter plans to organize or cosponsor three technical workshops, four dinner meetings, and an annual workshop during its 1996-97 program year. In September, the chapter assisted the California Office of Emergency Services by supplying six speakers at a four-day training course for California Administering Agencies on a new state program that combines California's Risk Management and Prevention Program with the federal Risk Management Plan. The chapter's dinner meeting in September featured Linda Meadow of the Los Angeles Metropolitan Transit Authority, who spoke on "Risk and Prioritizing Resolution of Rail Grade Crossing Hazards." On December 14, the chapter will hold a risk management workshop at the University of California in Los Angeles. The chapter's Web site is located at <http://members.aol.com/scsra/index.html>.

SRA Specialty Groups

The Society for Risk Analysis specialty groups invite anyone interested in the topical areas served by the groups to join their activities at the 1996 Annual Meeting of SRA and the International Society of Exposure Analysis.

Dose Response Specialty Group will hold a mixer-seminar with the **Ecological Risk Assessment Specialty Group** at 6:00 p.m., Sunday, December 8. It will feature informal presentations on human health endpoints by Lorenz R. Rhomberg of the Harvard Center for Risk Analysis and on ecological endpoints by Lawrence W. Barnhouse of the ChemRisk Division of McLaren/Hart Environmental Engineering. The Dose Response group will hold its business meeting at 7:00 p.m., Monday, December 9. For information, contact the group's chair, Scott R. Baker of EA Engineering, Science, and Technology Inc., Bellevue, Washington, e-mail sb@eaeng.mhs.compuserve.com, telephone (206) 451-7400, fax (206) 451-7800.

Ecological Risk Assessment Specialty Group, in addition to participating in the mixer-seminar (see above), will hold its business meeting at 7:00 p.m., Monday, December 9. For information, contact the group's chair, William (Bill) Alsop of ChemRisk, Alameda, California, e-mail bill_alsop@mclarenhart.com, telephone (510) 748-5657, fax (510) 521-1547.

Engineering Specialty Group will meet at 7:00 a.m., Monday, December 9. For information, contact Ali Mosleh of the University of Maryland in College Park, e-mail mosleh@eng.umd.edu, telephone (301) 405-5215, fax (301) 314-9601.

Exposure Assessment Specialty Group will meet at 7:00

a.m., Wednesday, December 12. For information, contact the group's chair-elect, Alison C. Cullen of the University of Washington in Seattle, e-mail alison@u.washington.edu, telephone (206) 543-4900, fax (206) 543-1096.

Food Safety Risk Assessment Specialty Group will hold an organizational meeting at 7:00 a.m., Wednesday, December 11. For information, contact the group's spokesman, Michael D. McElvaine of the U. S. Department of Agriculture's Office of Risk Assessment and Cost-Benefit Analysis, Washington, D.C., telephone (202) 720-8022, e-mail mmcelvaine@sies.wsc.ag.gov.

Risk Communication Specialty Group will meet at 6:00 p.m., Sunday, December 8. For information, contact the group's chair, Branden B. Johnson of New Jersey Department of Environmental Protection, Trenton, telephone (609) 633-2324, fax (609) 292-7340, e-mail brandenj@ehsi.rutgers.edu.

Risk Science and Law Specialty Group will conduct a two-session symposium beginning at 10:30 a.m., Tuesday, December 10. The symposium will open and close with panel discussions on "Congress, the Courts, and Agency Risk Assessments" and "Risk Assessment and Toxic Injury Litigation," respectively, and will include individual presentations on the themes of regulatory innovations in risk assessment and of law, policy, and risk assessment. The group will conduct its first business meeting at 6:00 p.m., Sunday, December 8. For details, contact the group's founder Wayne Roth-Nelson of Roth-Nelson Risk Science in Lafayette, Colorado, telephone (303) 494-9694, fax (303) 494-3785; or Paul Locke of Environmental Law Institute in Washington, D.C., telephone (202) 939-3842, fax (202) 939-3868.

Advertisements

ITS Risk Analysis & Management Sales & Marketing Position Available

ITS Risk Analysis & Management (ITS RAM) is a global company dedicated to providing the highest quality safety consulting services — specializing in consumer products and products intended to be used by children. ITS RAM focuses on child safety research and the development of new technologies for assessing risk.

ITS RAM is seeking applicants for a Sales & Marketing position. Applicants for this position should possess strategic and tactical sales and marketing expertise, and ideally would have experience in the field of risk analysis. The position requires: defining a global marketing strategy, establishing long term client partnerships, and providing sales training and support to global staff. We are looking for a team builder who is highly motivated, creative, flexible, and who has the highest degree of personal and professional integrity.

Inquiries should be sent to the attention of Nancy Rivera/HR at: ITS RAM, 1301 West 22nd St., Suite 901, Oak Brook, IL 60521.

Note: To publish an advertisement in RISK newsletter, contact Katie Ingersoll at telephone (423) 691-0176, fax (423) 691-0229, or e-mail ingersol@usit.net.

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Advertisements

Available Positions at The Harry Reid Center

Risk Communication Practitioner. The Harry Reid Center for Environmental Studies at the University of Nevada, Las Vegas, is seeking a highly motivated public communication expert to institute innovative and effective modes of public interaction in the discipline of chemical and radiological risk communication. The Harry Reid Center administers the Nevada Risk Assessment/Management Program and conducts research in hazard potential from existing contaminated areas and, in particular, the Nevada Test Site. Applicants must have a Bachelor's Degree, excellent communication skills and experience in communicating technical/scientific information to the public as well as working with the public. Competitive salary will be based on qualifications and experience. Please submit a current resume, cover letter, and the names of three references to: Don Baepler, Ph.D.; Chair, Search Committee (Risk Communication Practitioner); Harry Reid Center for Environmental Studies; University of Nevada, Las Vegas, Box 454009, Las Vegas, NV 89154-4009. Position is available Jan. 1, 1997 or until filled. UNLV is an AA/EOE.

Harry Reid Center personnel will be attending the December ISEA/SRA meeting in New Orleans: check bulletin board for information.

Senior Risk Assessment Expert. The Harry Reid Center for Environmental Studies at the University of Nevada, Las Vegas, is seeking a senior scientist to coordinate risk assessment analyses for the Nevada Risk Assessment/Management Program (NRAMP). The applicant must have a highly developed proficiency (Ph.D. or equivalent, preferred) in at least one area of risk assessment, preferably groundwater science, multimedia contaminant transport, or chemical toxicology. The Harry Reid Center administers the NRAMP and conducts research in hazard potential from existing contaminated areas and, in particular, the Nevada Test Site. Preference will be given to applicants with EPA or DOE program experience. Competitive salary will be based on qualifications and experience. Please submit a current resume, cover letter, and the names of three references to: Don Baepler, Ph.D.; Chair, Search Committee (Senior Risk Assessment Expert); Harry Reid Center for Environmental Studies; University of Nevada, Las Vegas, Box 454009, Las Vegas, NV 89154-4009. Position is available Jan. 1, 1997 or until filled. UNLV is an AA/EOE.

Postdoctoral Fellowship in Risk Assessment and Environmental Health Policy

Postdoctoral Fellowship position available at Rutgers University for individual interested in risk assessment and environmental health policy. The successful candidate will have excellent written and oral communication skills and possess a Ph.D. in toxicology, environmental health or a related discipline from an accredited university. The Fellow will work with the Director of the Environmental and Occupational Health Sciences Institute (EOHSI), Bernard D. Goldstein, M.D., and with other members of the faculty on one or more projects related to risk assessment and environmental policy. Current pertinent efforts include studies of public policy issues, risk perception and stakeholder involvement in Department of Energy nuclear sites; issues related to environmental justice; community environmental health risk assessment models; the role of risk assessment in international environmental health; and the appropriate use of uncertainty estimates in risk assessment. The position is expected to include original research, the presentation and writing of papers and involvement in the development of national and local scientific meetings related to the area of research.

This is a 1-2 year position located at EOHSI on the Busch Campus of Rutgers in Piscataway, NJ. EOHSI is a joint program of Rutgers, The State University of New Jersey and the University of Medicine and Dentistry of New Jersey -Robert Wood Johnson Medical School. Salary \$25,000/year.

Interested applicants should send a current resume, a copy of their most recent transcript, and three letters of reference to Dr. Mark G. Robson, Executive Director, EOHSI, 681 Frelinghuysen Road, Piscataway, NJ 08855-1179

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2) Junior level fate and transport modeler, at least two years of experience in the application of EPA-approved models. Emphasis in emission and air dispersion models applicable to industrial sources preferred.

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New Procedure for Journal Submissions

On January 1, 1997, a new procedure for submitting manuscripts to *Risk Analysis: An International Journal* will go into effect as three recently named area editors begin accepting journal submissions. Authors whose papers fall in the following areas should send their papers to the designated area editor:

Engineering

Vicki M. Bier, Editor
Risk Analysis: An International Journal
Department of Industrial Engineering
University of Wisconsin
1513 University Avenue, Room 451
Madison, WI 53706

Environmental and Health Risk Analysis

Paul F. Deisler Jr., Editor
Risk Analysis: An International Journal
2001 Mountain View Road
Austin, TX 78703

Social Sciences and Decision Making

Detlof von Winterfeldt, Editor
Risk Analysis: An International Journal
Decision Insights Inc.
2062 Business Center Drive, Suite 110
Irvine, CA 92612
(*Winterfeldt's address effective December 1.*)

Authors whose papers cut across disciplines or do not clearly fall in one of the above areas should send their papers to:

Curtis C. Travis, Editor-in-Chief
Risk Analysis: An International Journal
P. O. Box 5088
Oak Ridge, Tennessee 37831

New Orleans December Events

Algiers' Bonfire. Annual bonfire, boat parade, music, on the West Bank of the Mississippi River, Dec. 7, 7 p.m.

Fabergé Exhibit. New Orleans Museum, 400 artworks by master jeweler Peter Carl Fabergé, Dec. 8, 10 a.m. to 5 p.m.

Reveillon Christmas meals. French Quarter restaurants recreate elaborate holiday feasts served in the 1800s.

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