

RISK *newsletter*

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Columbia-Cascades, Ohio Chapters Become Nos. 10 and 11

SRA Forming Topical Section on Global Risk Analysis

Concern for the fragile global environment is burgeoning. The apparent loss of ozone in the stratosphere, the buildup of greenhouse gases, and the desertification and deforestation of the earth may all irreversibly damage portions of the earth's ecological system.

What processes cause these and other global changes that threaten the future? What is their frequency of occurrence? What impact on the earth's ecological system can be expected? What levels of uncertainty are involved? What are the possibilities of global societal responses to deal with the physical changes? What are the limitations of these responses due to the political boundaries? What philosophical and ethical questions might be embedded in potential solutions?

The foregoing concerns and questions have prompted a number of activities outside the Society for Risk Analysis, including the formation by the International Council of Scientific Unions of an International Geosphere-Biosphere Programme which will study global change on a variety of space-time scales beginning in the 1990s. More immediately, an international workshop titled "Understanding Global Environmental Change: The Contributions of Risk Analysis and Management" will be held in October. The

workshop is in part an initiative of the Human Dimensions of Global Change Program which is based in Toronto and has support from the United Nations University and the Center for Technology, Environment, and Development (CENTED) of Clark University. The workshop will be held at CENTED's new facility in Worcester, Massachusetts.

As participants in some of these activities, several members of SRA have increasingly felt that the Society could provide a continuing forum for addressing critical global issues. Thus it was no surprise to these persons that a session on global risk assessment chaired by Michael H. Tiller and Steve Rayner at SRA's 1988 Annual Conference sparked considerable dialogue between the presenters and the audience and then evolved into an impromptu multidisciplinary meeting following the session. Among those staying for the meeting were a physicist, an anthropologist, an economist, an environmental engineer, a geographer, and a sociologist, all sharing a common interest in global risk analysis.

One outcome of the meeting was a subsequent request to the SRA Council for a permanent SRA structure within which a dialogue on global risk analysis could be continued. The request

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Two new chapters received final approval at the March 17 meeting of SRA's council after questions about the chapter names and bylaws had been resolved. One of the new chapters will be known as the Columbia-Cascades Chapter and will glean its membership from the states of Washington, Oregon, and Idaho and from Canada's British Columbia. The other chapter is called the Ohio Chapter and will derive its membership from the tristate area surrounding Cincinnati. With the recognition of these two chapters, the society now has eleven chapters.

The Columbia-Cascades Chapter, which currently consists of about 25 members from academia, government agencies, and industry, had an organizational meeting during the spring and elected officers soon thereafter. The new president is George Cvetkovich, who is the director of the Western Institute for Social and Organizational Research at Western Washington University (Bellingham) and served as the chapter's acting secretary during the organizing period. The president-elect is Richard Palmer of the Department of Civil Engineering of the University of Washington.

Other officers include Secretary Timothy C. Earle, a research associate at the Western Institute for Social and Organizational Research, and Treasurer Donald MacGregor of Decision Research, Eugene, Oregon. The treasurer's office is a two-year

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Chapter News

East Tennessee Chapter Elects Officers

In elections held by the East Tennessee SRA Chapter in February, Milton Russell, who holds a dual appointment at the University of Tennessee and Oak Ridge National Laboratory, was voted in as president-elect. He is serving with William Colglazier, also of the University, who has assumed the presidency of the chapter.

Others elected were Denise Crenshaw-Smith (H&R Technical Associates), secretary; Mary English (University of Tennessee), treasurer; and Ram Uppuluri (Oak Ridge National Laboratory), council member. Uppuluri is beginning a three-year term on the chapter's council. Curtis Travis (ORNL), the immediate past president, will remain on the council two more years, and Peter Groer (Oak Ridge Associated Universities) and Joe Minarick (Science Applications International Corporation) will each serve one more year on the council.

The East Tennessee Chapter will hold its sixth annual Risk Analysis Methods Day on June 14 at JBF Associates in Knoxville, Tennessee. Speakers for the event will be Beth Levine, ORAU Fellow (Role of Risk Assessment in Hazardous Waste Management); David Adler, Bechtel National ("Application of Risk Assessment in Remedial Action Planning"); Mike Farrell, ORNL ("Global Change: The Case for Risk Analysis"); Jerry Fussell, JBF Associates ("Risk Assessment in the Process Industry"); Tommy Thelms, University of Tennessee ("Degradation of Mixed Organic Waste"); Elizabeth Peelle, ORNL ("Two Citizen Task Forces Respond to Potential Nuclear Waste Facilities"); and Mary English, UT ("Risk Assessment, Prioritization, and Management: Interconnections").

Northern California Chapter Preparing for Annual Meeting

As noted elsewhere in this newsletter, the activities of the Northern California Chapter continue to be focused on preparations for hosting the 1989 Annual Meeting of the Society for Risk Analysis in San Francisco on October 29 through November 1; however, other events are also occurring.

On April 27, chapter members met at the Stanford Faculty Club to hear Alice Whittemore, professor of epidemiology and biostatistics at Stanford University, speak on "New Directions in Cancer Risk Assessment," and on May 12, the chapter cosponsored the Third Annual Meeting of the Northern California Chapter of the Society of Toxicology at the Letterman Army Institute of Research located on the San Francisco Presidio. At the latter meeting, the chapter sponsored a morning poster session on "Risk Assessment and Related Topics," which was chaired by Kenneth Bogen of Lawrence Livermore National Laboratory.

Also in April, the chapter's newsletter included a complete membership directory that listed 115 members.

Southern California Chapter Holds Annual Workshop

Over 70 persons attended the Southern California Chapter's second annual workshop, which this year focused on "Quantitative Risk Assessment: Realizing Its Full Potential." The workshop was held May 12 at the Irvine Hilton Hotel. Following the format established last year, the workshop consisted of consecutive sessions (three) in which four speakers each gave 20-minute talks and a discussion period was scheduled at the end of the session. A fourth session was devoted to a panel discussion. The session topics dealt with QRA in the space, nuclear and chemical process industries and with environmental risk and safety assessment.

Session chairmen and/or panelists at the workshop included Chapter President Stan Kaplan and SRA's President-Elect B. John Garrick, both of Pickard, Lowe and Garrick; Mardy Kazarians of Arthur D. Little; Sank Sankaran of Union Oil Company of California; George Apostolakis, University of California, Los Angeles; Roland Schinzingler, University of California, Irvine; and Chris Whipple, Electric Power Research Institute. The speakers were Jay Green and Donald Kessler, both of NASA Johnson Space Center; Floyd Maxwell, Aerospace Corporation; Mike Frank, Safety Factor Associates; R. Nichols Hazelwood and Larry Froebe, both of IT Corporation; Robert Wilkenfeld, Chevron Environmental and Health Center; Mark Saperstein, South Coast Air Quality Management District; Vojin Joksimovich, Accident Prevention Group; Alfredo Ang, University of California, Irvine; Theo Theofanous, University of California, Santa Barbara; and Kazarians.

Metropolitan Chapter Elects Officers

The Metropolitan (CT-NJ-NY) Chapter's new president-elect is Vinh Cam of the Region 2 Office of the U.S. Environmental Protection Agency, who will be serving with President Peter Hoefler of Pace University, Secretary Elmer Offenbacher (in his second year of a two-year term), and newly elected Treasurer Samuel Morris. The current councilors are Paul Moskowitz (in his second year), Jill Greenberg, and Albert Levinson. Cam, Offenbacher, Morris, and Moskowitz are also serving on the Program Committee, which is chaired by Cam.

The chapter met on April 17 at Brookhaven National Laboratories to hear Lawrence Swanson, director of the Waste Management Institute at SUNY-Stoney Brook, speak on "Floatables," i.e., debris that has recently been appearing on the beaches of Long Island, Connecticut, and New Jersey.

New Chapters Join SRA

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term; the secretary's office also will be a two-year term after next year's election.

The chapter also elected three councilors: Dana Devoli, who is with the regional office of the U.S. Environmental Protection Agency in Seattle; Joyce Tsuji, with Environmental Toxicology International, Inc., in Seattle; and Donald E. Wood, with Westinghouse Hanford, Richland, Washington. Devoli will serve two years, and Tsuji and Wood will each serve one year.

Cvetkovich says the chapter plans to focus on things of relevance to the Northwest and to emphasize cross-disciplinary efforts on a variety of issues. The first activity will be a half-day meeting in Seattle on July 28 at which representatives from the regional EPA office will talk on "Risk Comparisons."

Note: Persons interested in joining the Columbia-Cascades Chapter should contact: George Cvetkovich, Western Washington University, Bellingham, Washington 98225, Phone 206-676-3544, Fax 206-676-3044, or Electronic Mail CVET%WWU.EDU Relay.CS.NET (through Bitnet).

Ohio Chapter

The formation of the Ohio Chapter has resulted from the efforts of Steven D. Lutkenhoff, acting director of the Environmental Criteria and Assessment Office of the U.S. EPA in Cincinnati, supported by Roy F. Albert and Scott

Clark of the University of Cincinnati's Kettering Laboratory; Pasquale Scarpino of the University's Department of Civil and Environmental Engineering; Ronald J. Marnicio and William Rush of Ebasco Services in Dublin, Ohio; and John O. Burckle of the U.S. EPA's Risk Reduction Engineering Laboratory in Cincinnati.

The chapter's first meeting, held in Lebanon, Ohio, on June 6, attracted 43 persons, 31 of whom became charter members. The group heard Richard L. Shank, director of the state of Ohio's Environmental Protection Agency, discuss the importance of immediate communication with the public once an environmental risk is recognized. Delaying communication, he pointed out, leads to public outrage that is often disproportionate to the imminent risk. Joining Shanks in giving examples was Alan Franks, director of the Ohio EPA's Public Affairs Office.

Business conducted at the meeting included reviewing the proposed objectives of the chapter and appointing members of Nominating and Planning Committees. Named to the Nominating Committee were Rish, Scarpino, and Larry Glass of the U.S. EPA's Environmental Criteria and Assessment Office. Planning Committee members are Albert and Marnicio.

The chapter's next meeting will be held in August, at which the first set of officers will be announced.

Note: Persons interested in joining the Ohio Chapter should contact: Steven D. Lutkenhoff, Environmental Criteria and Assessment Office, U.S. EPA, Cincinnati, Ohio 45268, Phone 513-569-7531.

Research Triangle Chapter Has Monthly Meetings

The newsletter of the Research Triangle Chapter, published by Harvey Richmond, the chapter's first president (1987), reports that the chapter continues to meet on an approximately monthly schedule. On January 17, James R. Wilson, American Industrial Health Council, spoke on "Impact of Recent Scientific Developments on Risk Assessments for Cancer"; on February 13, Adam Finkel of the Center for Risk Management at Resources for the Future spoke on "Is Risk Assessment Really Too Conservative: Riving the Revisionists"; and on March 13, the chapter's president, Carol Schiller, and secretary, Deborah Amaral, spoke together on "Scientific Uncertainty: Two Views from the Bench." On April 11, the chapter cosponsored (with the North Carolina Chapter of the Society for Toxicology) a seminar on "Critical Issues in Quantitative Risk Assessment: Biological, Statistical, and Practical"; the speakers were Tom Starr of the Chemical Industry Institute of Toxicology, Chris Portier of National Institute of Environmental Health Sciences, and Ila Cote of the U.S. Environmental Protection Agency.

SRA Forming Topical Section

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was tentatively approved at the Council's March 17 meeting pending an amendment to the bylaws allowing for such an activity, and D. Warner North was designated as the section's contact councilor. Thus upon the expected passage of that amendment at the 1989 Annual Meeting in San Francisco, SRA will have formed its first topical section—the Global Risk Analysis Topical Section.

In support of the new section's objective of promoting global risk analysis, founding members are planning another session on global risk analysis at the 1989 Annual Meeting. The session will include a full report on the October workshop at CENTED and will be followed by an informal organizational meeting of the new section.

Membership in the section will be open to any SRA member. In the meantime, anyone wishing to obtain more information on the Global Risk Analysis Topical Section should contact Michael H. Tiller, Tiller Consulting Group, Inc., 2833 North Geyer Road, St. Louis, Missouri 63131, Phone 314-567-7480, Fax 314-567-4199.

1989 SRA Meeting in San Francisco October 29 - November 1

Get ready! The 1989 SRA Annual Meeting is closer than you think! It will be held in San Francisco, October 29 to November 1, at the elegant Nikko Hotel, which is in the heart of the city. Highlights of the meeting will be plenary and luncheon presentations by William D. Ruckelshaus, former administrator of the U.S. Environmental Protection Agency, by Donald Kennedy, former head of the U.S. Food and Drug Administration and currently president of Stanford University, and by NASA Astronaut John Young.

SRA's Annual Meetings Committee Chairman B. John Garrick, who will be accepting the president's gavel at the meeting, reports that over 200 abstracts have been submitted for the meeting. Special supersessions are planned for the topics of "Aids," "Earthquake Risk," and "Notable Developments in Social Science Theory and Risk." In addition, a number of additional sessions, some organized around specific topics, will be held on current risk issues in the health, public policy, and engineering sectors. Subjects to be addressed include Right-to-Know Legislation (SARA Title III), risk perception, computer security, and chemical/radiological risks. Panel discussions on various high-interest topics are also planned.

The meeting will be hosted by the Northern California Chapter with strong support from the Southern Cali-

fornia Chapter. Ray Boykin, California State University-Chico, and Chris Whipple, Electric Power Research Institute, are general co-chairmen of the meeting, and Willard (Bill) Gekler, Pickard, Lowe and Garrick, Inc., is the technical program chairman. Special chairs for the three supersessions are Curtis Travis of Oak Ridge National Laboratory (AIDS), Roger Kasperson of Clark University (social science), and Garrick (earthquakes). Joe Fiksel of Teknowledge, Inc., is chairman of the Finance Committee, and Jeffrey Daniels of Lawrence Livermore National Laboratory is chairman of the Arrangements Committee.

No evening sessions are planned for the meeting, so that the attendees can tour the city and savor its fantastic cuisine. First-time visitors will soon understand why San Francisco is called Baghdad-on-the Bay.

Registration forms will be mailed to the membership in late July. We are expecting the largest SRA attendance ever. Make sure you are there!

Brian Fagan
Pickard, Lowe and Garrick, Inc.
Phone 714-650-8000

SRA Sponsoring Forum on Risk of Extreme Events

Yacov Y. Haimes, chairman of SRA's Conferences and Workshops Committee, has announced that the Society will sponsor a "Forum on Risk of Extreme Events" at the Dupont Plaza Hotel in Washington, D.C. on December 12-13, 1989. The various lectures and workshops in the forum will address the risk assessment/management process, which comprises both quantitative/empirical and qualitative/normative analyses, with a focus on the risk of extreme or catastrophic events.

The lecturers and their topics are listed below:

Elizabeth Anderson, *President, Clement Associates, Inc.*

"Risk Assessment of Extreme Events: Uncontrolled Release of Toxic Chemicals."

B. John Garrick, *President & CEO, Pickard, Lowe, & Garrick, Inc.*

"Quantitative Risk Assessment with Applications."

"Recent Advances in Quantitative Risk Assessment."

Yacov Y. Haimes, *Lawrence R. Quarles Professor and Director of Center for Risk Management of Engineering Systems, University of Virginia*

"The Process of Risk Assessment and Management."

"Risk-Cost Tradeoff Analysis with Applications."

"Methodologies for the Quantification of Risk of Extreme Events with Applications."

General (Ret.) Alton D. Slay, *President, Slay Enterprises, Inc.*

"Risk of Extreme Events with Application to Aerospace."

For further information on rates and reservations, please write or call Kristi Jacobs at the SRA Secretariat (see box on back page).

SRA's Fourth Carcinogen Risk Course Well Attended

Approximately 50 persons attended the Society's fourth course on "Carcinogen Risk Assessment," which was held April 3-5 in Washington, D.C. The fifth course will be offered in the spring of 1990, again probably in the D.C. area. For further information on the course, contact Curtis C. Travis, 615-576-2107.

SRA-Japan Holds Workshop on Global Hazards

SRA-Japan is holding a special workshop on "Global Hazards and Environmental Risks" on the afternoon of June 23 at Tokyo Women's Christian University. T. Hirose of the University's Department of Psychology is the workshop convener, and guest speakers will be H. Ishii, science editor of *The Asahi Press*, and K. Ito, NHK news commentator.

Indo-U.S. Workshop in New Delhi in December

A workshop on "Environmental Risk Analysis" organized under the auspices of the Indo-U.S. Subcommittee on Science & Technology and sponsored by the Ministry of Environment & Forests of the Government of India will be held in New Delhi, India, on December 12-16, 1989.

The objectives of the workshop will be to review the state-of-the-art of risk assessment and emergency preparedness as related to the chemical and petroleum industries and their storage of large quantities of hazardous materials; to develop an appropriate strategy for emergency preparedness for the case of an industrial accident involving toxic/inflammable material; to strengthen the quantification aspects of risk assessments dealing with engineering failures, health effects, and dispersion modelling; and to transfer the know-how to the various user agencies.

Four Technical Sessions

The technical sessions will cover four major areas: (1) risk assessment: engineering aspects, (2) risk assessment: health effects, (3) transport and fate of toxic air pollutants vis-a-vis dispersion modelling, and (4) risk management. After peer review, the workshop proceedings will be published in a special issue of *Risk Analysis*.

Representatives from Indian industries, safety inspectorates and enforcement agencies will participate in the workshop, as well as U.S. experts in the relevant areas. State-of-the-art reviews on selected topics will be presented.

Persons in the U.S. wishing to participate may apply for National Science Foundation support (limited to a few) by contacting Curtis C. Travis, Oak Ridge National Laboratory, P.O. Box 2008, Oak Ridge, Tennessee, 37831-6109. To obtain more information on the workshop, write to Professor M. P. Singh, Centre for Atmospheric Sciences, Indian Institute of Technology, New Delhi-110016, India.

Note: News for the next newsletter should be received by the editor by August 15.

Approximately 100 persons attended the section's first annual workshop held last December 10 at the National Institute of Public Health in Tokyo. The meeting, which was covered by *The Yomiuri Press* and other newspapers, included four sessions, each consisting of a review paper followed by two to four contributed papers.

The four sessions at the workshop were on radioactive risks, insurance risks, risk cognition and communication, and health risks. Titles of the review papers are as follows:

"A Survey of the Studies Assessing Radioactive Risks in Japan," by S. Kobayashi, M. Uchiyama, T. Aoyama, and T. Iwasaki.

"Risk Cognition in Buying Life Insurance," by S. Nishimura.

"Risk Perception and Risk Communication," by T. Okamoto.

"Health Risks by Rare Chemicals," by E. Yokoyama.

Abstracts of all the papers presented at the December workshop are available in Japanese, and persons wishing to receive them should write to: Professor Saburo Ikeda, Institute of Socio-Economic Planning, The University of Tsukuba, 1-1-1 Tennoudai, Ibaraki 305, Japan (Phone: 0298-53-5182; Fax 0298-53-5070).

ESF Research Fellowships in Toxicology Available

The European Science Foundation Programme of Research Fellowships in Toxicology is currently accepting applications for the year 1989 and 1990. Research fellowships (3 to 12 months, beginning no earlier than January 1, 1990) and short-term visiting fellowships (up to two months, beginning at any time in 1989 or 1990) are offered to scientists of any nationality working in European (or Israeli) laboratories to go to laboratories in other European countries. The deadline for applying for a research fellowship is September. Applications and further information can be obtained from: Caroline Schneider, European Science Foundation, ESF Research Fellowships in Toxicology (PGT), 1, quai Lezay-Marnesia--67000 Strasbourg France; Phone 88 35 30 63; Telex 890 440; Fax 88 37 05 32.

Hungarian Committee for Accident Research Seeks Information Exchanges

by Anna Vari

(Editor's Note: Anna Vari is the secretary of the Hungarian Committee on Accident Research. Her address is: Hungarian Institute for Public Opinion Research, H-1054 Budapest Akademia u. 17, Hungary. The president of the Committee is Prof. Ferenc Irk, whose address is H-1525 Budapest, P.O.B. 41.)

The Hungarian Committee for Accident Research has functioned within the framework of the Hungarian Academy of Sciences since 1986 and now feels that it is ready to exchange information and experience with other national and international organizations.

Participants in the Committee are physicians, psychologists, sociologists, engineers, economists and lawyers, many of whom have been concerned with the prevention of accidents for decades. They have been exploring the current state of the art of accident prevention, focusing both on an understanding of the causes of accidents and on investigating the "blank spots" in accident statistics in Hungary, particularly the number and ratio of home and leisure-time accidents. While extensive data were available on traffic and occupational accidents in Hungary, no reliable statistical data bases had been established on home and leisure-time accidents.

County Survey Performed

A comprehensive survey was performed for all the accidents that occurred in one county between April 1, 1988, and March 31, 1989. The gathering of the data on the nearly 25,000 accidents was sponsored by the Insurance Research Group of the Marx Karoly University of Economics, as is the processing and analysis of the results.

From this survey the types and frequencies of accidents throughout Hungary can be estimated and the results can be compared with similar data in Western and North European countries. The data base provides information on the more important morphological characteristics of the accidents, on some sociographic features of the injured, and, to some extent, on the role of personal insurance in accidents.

From its work, the Committee hopes to improve accident prevention in Hungary, first within the sphere of home and leisure-time accidents and later expanding its work to include other types of accidents. It believes that reaching its goal will be expedited through interactions with similar organizations in other countries. Persons or individuals wishing to participate in such exchanges should write to the addresses given at the beginning at this article.

Risk Network Planned for European Region of WHO

A planning meeting of the "European Network for Risk Communication and Management" will be held June 25-27, 1989, at the Schloss Reisenburg Gunzburg, Federal Republic of Germany. The planning meeting represents an initial step of the WHO-Collaborating Centre on Risk Management in Chemical Safety (operated by the International Institute for Scientific Collaboration e.V. Schloss Reisenburg [ISR]) to create and lead a network for risk communication and management in the European Region of WHO. The meeting will bring together key individuals and representatives of relevant institutions in the field. The goal of the meeting is to develop the concept of the network, to solicit recommendations for priority topics of joint research and training activities, and to reach additional interested partners.

Budapest Conference on Decision Support Systems Scheduled

The John von Neumann Society for Computing Sciences is sponsoring a working conference on "Environments for Supporting Decision Processes" to be held at the Hotel TOT in Budapest, Hungary, June 18-21, 1990. Topics to be covered are: social environment and decision support technology; libraries of decision-aiding tools; applications of decision support systems (DSS) in unusual environments; developing organizational support for DSS; hardware environments and configuration; and DSS for supporting individual, group, or organizational decisions and negotiations.

Contacts for the Program Committee are: George P. Huber, Dept. of Management, CBA 4,202, University of Texas, Austin, TX 78712, USA; and Henk G. Sol, Dept. of Informations Systems, Delft University of Technology, Postbus 356, 2600 AJ DELFT, The Netherlands. Anna Vari and Maria Toth are cochairmen of the Organizing Committee.

See a difference in the newsletter? The columns are wider, the text is tighter, the headings are in different type, and the typesetting has been done on a laser printing. These are all cost-savings measures which we hope do not sacrifice too much in readability.—The Editor

The Conference Secretariat is: Gabriella Aranyos, John von Neumann Society for Computing Sciences, Budapest V. Bathori u.16, H-1368 Budapest 5.POB.240; Phones 361-329-349 and -390; Telex 22-5369.

Environmental Congress to Address Political Decisions in the Face of Scientific Controversies

Jerome Ravetz, an epistemologist and specialist in the history of science at the University of Leeds, United Kingdom, has stated that "Henceforth, we shall increasingly need 'hard' decisions made by politicians having at their disposal merely 'soft' or potentially controversial scientific evidence."

Ravetz is articulating the general recognition that many political decisions are made under extreme conditions of scientific uncertainty, and that will be the focus of an international congress on the environment to be held in Paris, France on September 11-13 or 13-15. Titled "The Experts Are Categorical: Scientific Controversies and Political Decisions Concerning the Environment," the congress is being organized by the French Ministry of the Environment and the Association GERMES under the patronage of the French Committee of the Man and Biosphere Program and of the European Community Commission.

Need Arises from Paradox

The need for such a congress, say the organizers, arises from a paradox: The role of scientific expertise in environmental policy decisions is becoming increasingly important at the same time that the complexity of ecological phenomena and the compartmentalization of knowledge in the field of "ecology" have increased the scientific uncertainties and broadened the range of controversies.

Experts who have agreed to participate in the congress include William Clark (ecologist), Harvard University; Francisco di Castri, director of CEPE-CNRS Montpellier, president of SCOPE; Mary Douglas (anthropologist), Princeton University; Claude Henry (economist), Ecole Polytechnique; John Law (professor of the history of science), Great Britain; Gilbert Long, president of the MAB Committee, France, and director of research at CEPE, Montpellier; Ted Munn (physicist, climatologist), director of the Biosphere Program at the International Institute for Systems Analysis, Vienna; Rene Passet (professor of economics), University of Paris I; Francois Ramade (professor of exotoxicology), University of Paris, Orsay; and Ravetz. Other scientists and philosophers have also been invited.

Three Plenary Sessions, Workshops

One-half of the congress will be devoted to plenary sessions addressing the following topics: the epistemology and history of the sciences concerned with the environment; the social, economic and institutional conditions for the production of knowledge bearing on the environment; the role of the politics of research and the politics of the improvement of basic scientific data; the structuring and institutionalization of expert assessment on the national and international levels; the means of establishing scientific information and the role of the media in transferring knowledge; decision-making and management under conditions of uncertainty; and the relationship between science and ethics.

The remainder of the congress will consist of workshops on specific issues or events about which controversy exists. These include: the modification of climate; the reduction of the ozone layer; acid rain; accidental and nonpoint water pollution; setting standards for the quality of water; toxic, carcinogenic agents (particularly PCB and dioxin); risks linked to biotechnology and nuclear risks; the introduction and reintroduction of species; ecological criteria for determining habitats or regions to be protected; the methods of management of uncertainty; and the recognition and selection process of new environmental problems.

The aim of the workshops will be to demonstrate the scientific, economic, and political stakes or implications specific to different controversies, as well as their consequences for decision-making at both the national and the international levels.

The working languages of the congress will be English and French. Abstracts for the meeting were to have been submitted by February 15. For additional information, contact: Comite d'organisation du colloque, "Les experts sont formets," A l'attention de Jacques Theys, Groupe de Prospective, 74 rue de la Federation - 75015 Paris, France; Phone 1 46 47 32 21. In addition to Jacques Theys, a second representative of the organizing committee is B. Kalaora, SRETIE, Ministere de l'Environnement.

On the Ballot

SRA members will soon be receiving ballots to elect officers and councilors for the year 1989-1990. The nominees are as follows:

President-Elect: Howard Kunreuther, Wharton School, University of Pennsylvania, Philadelphia, Pennsylvania; Curtis Travis, Oak Ridge National Laboratory, Oak Ridge, Tennessee.

Secretary (two-year term): Frances M. Lynn (running for second term), University of North Carolina, Chapel Hill, North Carolina; Vlasta Molak, National Institute of Occupational Safety and Health, Cincinnati, Ohio.

Treasurer (two-year term): Raymond F. Boykin, California State University, Chico, California; Rae Zimmerman, New York University, New York, New York.

Councilors (running in pairs):

Roger E. Kasperson, Clark University, Worcester, Massachusetts, vs. Donald E. Stevenson, Shell Oil Company, Houston, Texas.

R. A. (Tony) Cox, Technica Limited, London, England, vs. Marc Poumadere, Institut SYMLOG, Cachan, France.

Peter Barton Hutt, Covington & Burling, Washington, D.C., vs. Michael R. Taylor, King & Spalding, Washington, D.C.

Waste Reduction and Community Right to Know

by Vlasta Molak

(Editor's Note: Vlasta Molak is chairman of SRA's Subcommittee on International Affairs. She is also a member of the Local Emergency Planning Committee of Hamilton County, Ohio. It is in the latter role that she offers here a perspective on an opportunity presented by the 1986 Community Right-to-Know Act.)

As pointed out by Michael Baram in an earlier newsletter article (September, 1988, p. 10), the Emergency Planning and Community Right-to-Know Act of 1986, while having the potential for causing community anxieties, offers many opportunities for improving risk management. Perhaps one of the greatest opportunities is the possible significant reduction in the generation of toxic chemical wastes through the innovative use, by both the public and industry, of communication channels and data bases put in place by the Act.

"It is important to distinguish between waste minimization and waste reduction."

To establish this thesis, it is important to distinguish between waste *reduction* and waste *minimization*. Waste minimization, which currently receives the most attention, includes any activity that reduces the volume of waste that must be disposed of in landfills outside the facility producing the waste. That is, waste minimization does not consider wastes that are released directly to the environment.

By contrast, waste reduction is defined as any in-plant practice that reduces, avoids, or eliminates waste generation. Obviously, waste reduction

can facilitate waste minimization; however, in waste reduction the focus is on using various in-plant processes to reduce the total amount of waste that must be disposed of, the most likely processes being waste treatment and/or recycling within the plant.

The Environmental Protection Agency has stated that waste reduction should be a first order of business (Federal Register, August 18, 1976), but unfortunately the agency, as well as the public, has tended to concentrate on waste management rather than giving industry incentives for reducing waste generation. It is possible that the inattention to waste reduction in the past has resulted from a lack of information on waste generation and/or the non-availability of the information to the public. It could also result from the failure of industrial plants to assess their own situations on a regular basis. These reasons no longer exist, however, since Section 313 of the Right-to-Know Act requires regular reporting by industry, the maintenance of a data base summarizing the reports, and the release of the information to the public. In addition, a mass balance study by the National Academy of Sciences is to be available by 1991.

Although not designated as direct recipients of the toxic release inventories (TRIs) under Section 313, Local Emergency Planning Committees (LEPCs) that have been mandated for each state by the Right-to-Know Act have access to the TRIs and presumably are using them to fulfill their charge to determine chemical hazards to the public, to increase the public safety, and to plan for emergencies created by potential chemical accidents. Continuous low-level toxic releases reported in the TRIs do not receive nearly as much media attention as accidental releases, but they are potentially of much greater significance for the well being of the community. By educating the public about the more hidden as-

pects of chemical pollution, the LEPCs may be able to convince local industries to seek solutions for waste reduction within their plants.

"LEPCs may be able to convince local industries to seek solutions for waste reduction within their plants."

Under Section 313, all facilities that process specific chemicals in quantities exceeding threshold quantities must report their annual releases of such chemicals to the environment. They must also give detailed information about how they manufacture or use the chemicals, their modes of release, the maximum amounts of the chemicals on site during the year, etc. The analyses required to complete the report itself should encourage the companies to reassess their practices and to consider the advantages of utilizing additional waste-reduction procedures. Although initially expensive, in many cases the company would realize an overall savings in long-term production costs, as well as a reduction of risks to the public.

A rough analysis of the releases reported under the Right-to-Know Act for Hamilton County, Ohio, gives a good example of the need for cooperation between the public and industrial sectors to reduce chemical wastes. The report says that approximately 96 million pounds of toxic chemical wastes listed in Section 313 were generated and released in the county during 1987. The actual amounts were probably much higher, since hundreds of chemicals used by industry, including hazardous chemicals, are not included in Section 313 and therefore are not reported; also, many companies are exempt from reporting by virtue of their sizes or the quantities of the chemicals they handle.

SRA and CENTED to Compile Risk Course Information

Srinivas Emani, a research assistant at the Center for Technology, Environment and Development (CENTED) at Clark University in Worcester, Massachusetts, has proposed the preparation of a guide listing information on risk and risk-related courses taught in various academic and professional programs. He points out that the guide is needed since such courses are offered under numerous disciplines, including environmental studies, science and technology, policy sciences, and in various departments in the physical sciences, engineering, medicine, and business administration.

SRA has agreed to collaborate with CENTED in collecting information on such courses and in exploring the possibility of producing a guide. The work will be performed by Emani, who is also a Ph.D. student in Clark University's interdisciplinary Environment, Technology and Society Program. Jeanne X. Kasperson, research librarian at CENTED, will assist in the project.

The purpose of the guide would be to:

- Provide SRA members and others with information that will help them pursue their interests in particular areas in the field.
- Serve as a useful information base for examining the treatment of risk in the academic setting (e.g., the integration of risk in different disciplines).
- Serve as a vehicle for increasing SRA's membership, particularly its student membership.
- Identify strengths and weaknesses and pinpoint gaps in the current offering of academic courses.

The compilation of such a guide must rely on contributions from the Society membership. Please send relevant and detailed information (course title, location, instructor, cost, etc.) on risk-related courses to: Srinivas Emani, CENTED, Clark University, 950 Main Street, Worcester, MA 01610.

Even so, the reported wastes amount to about 100 pounds per citizen. Based on national Resource Conservation and Recovery Act (RCRA) estimates, the real number is probably 2000 pounds per citizen.

Of the 96 million pounds reported for Hamilton County, 9 million pounds were released directly into the atmosphere and more than 80 million pounds were released into Publicly Owned Treatment Works (POTW), where the volatile chemicals can eventually reach the atmosphere or travel through sewer lines. Thus, *only about 6% of all the toxic chemical wastes generated were physically transported offsite for treatment and/or land disposal.* In other words, waste minimization efforts addressed only a small fraction of the problem. From this example, it appears

that POTWs could play a critical role in encouraging waste reduction, either by limiting the amounts of chemicals that could be discharged or by charging fees for the discharges.

Another consideration is the cost of the chemicals released into the environment as wastes. If the chemicals in the Hamilton County wastes were to be purchased at 1988 wholesale prices, the cost would be \$24 million — of which \$3 million went into the atmosphere and \$19 million went down the sewer. This rough estimate does not, of course, take into account the costs of waste management or wastewater treatment or the costs of the adverse effects of the released chemicals on human health and the environment and the litigations arising therefrom. If all these costs were consid-

ered, as they should be in a properly managed manufacturing plant, a strong economic case for implementing waste-reduction measures in the facilities could no doubt be made.

Some large companies (notably Monsanto, Dow Chemical, and 3M) are already engaged in research aimed at finding technical solutions to waste reduction. Fortunately, they have the in-house expertise to study their problems, but small companies without such resources need encouragement and assistance from others. That assistance could and should be forthcoming from cooperative efforts of the public and industry, and the LEPCs are strategically positioned to facilitate those efforts. It's an opportunity that should not be allowed to slip by!

Journal Contents

The table of contents of Vol. 9, No 2 of the SRA journal *Risk Analysis* is reprinted below.

GUEST EDITORIALS

Ellen K. Silbergeld, *Lead in the Environment: Coming to Grips with Multisource Risks and Multifactorial Endpoints*

Harry Otway and Brian Wynne, *Risk Communication: Paradigm and Paradox*

Yacov Y. Haimes, *Toward a Holistic Approach to Risk Assessment and Management*

LETTERS TO THE EDITOR

Jack Cawdery and David Marshall, *Sustainable Development: A Promising New Avenue for Transferring Risk Analysis Technology to Developing Countries*

George V. Alexeeff, Melanie A. Marty, and Michael J. Lipsett, *Comments on Permitting of Resource Recovery Facilities*

ARTICLES

J. Christopher Cordaro, *Transgenic Mice as Future Tools in Risk Assessment*

Bernhard Metzger, Edmund Crouch, and Richard Wilson, *On the Relationship Between Carcinogenicity and Acute Toxicity*

Anup Dewanji, David J. Venzon, and Suresh H. Moolgavkar, *A Stochastic Two-State Model for Cancer Risk Assessment. II. The Number and Size of Premalignant Clones*

Bart David Ostro, *Estimating the Risks of Smoking, Air Pollution, and Passive Smoke on Acute Respiratory Conditions*

Ronald G. Whitfield and Thomas S. Wallsten, *A Risk Assessment for Selected Lead-Induced Health Effects: An Example of a General Methodology*

F. Reed Johnson and Ann Fisher, *Conventional Wisdom on Risk Communication and Evidence from a Field Experiment*

Sophie Bastide, Jean-Paul Moatti, Jean-Pierre Pages, and Francis Fagnani, *Risk Perception and Social Acceptability of Technologies: The French Case*

Gerald T. Gardner and Leroy C. Gould, *Public Perceptions of the Risks and Benefits of Technology*

James Mitsiopoulos and Yacov Y. Haimes, *Generalized Quantification of Risk Associated with Extreme Events*

SOFTWARE REVIEWS

J. S. Salmento, E. S. Rubin, and A. M. Finkel, *A Review of @Risk*

Bill Barton, *Response from Palisade Corporation*

SOFTWARE LISTINGS

Paul D. Moskowitz

BOOK REVIEWS

Robin K. White

GUEST BOOK REVIEW

Robert B. Cumming, *Risk Communication and Social Choices: The Discussion Heats Up*

SRA Proceedings Schedules

1987 Proceedings

Camera-ready pages for the proceedings of the 1987 SRA Annual Meeting held in Houston were released by Tec-Com, Inc., to Plenum Publishing Corporation on March 22, and Plenum spokesman Melanie Yelity says that copies of the volume will be available before SRA's 1989 meeting. These proceedings, to be published as Volume 7 in Plenum's "Advances in Risk Analysis" series, are titled *Risk Assessment in Setting National Priorities*. They consist of a compilation of 73 papers edited by James J. Bonin and Donald E. Stevenson. The volume may be ordered by SRA members at a special rate of \$45. The order should be mailed to the SRA Secretariat (see address on back page of this newsletter) with a check made payable to the Society for Risk Analysis.

1986 Proceedings

The 1986 proceedings for the Boston meeting, to be published as Volume 6 in the series, are currently being typeset by Tec-Com and proof copies of 83 papers are being returned to the authors. The volume, titled *New Risks: Issues and Management*, has been edited by Paola Ricci.

1988 Proceedings

The 1988 proceedings for the Washington meeting are being compiled and edited by Constantine Zervos, with assistance from Lee Abramson, Kathleen Knox, and Richard Coppock. The eighth volume in the "Advances in Risk Analysis" series, the proceedings will be titled *Risk Analysis: Prospects and Opportunities*.

Bibliography on Interdisciplinary Risk Literature To Be Published

A 500-item, subject-indexed bibliography titled "Technological Risk and Society: The Interdisciplinary Literature" has been compiled at the Illinois Institute of Technology, Chicago, and will be published in the journal *Research in Philosophy and Technology* in early 1990. The bibliography, which includes many articles from SRA's journal *Risk Analysis*, has been compiled by Sohair ElBaz and Thomas J. Misa. For further information, Misa may be contacted at: Dept. of Humanities, IIT Center, Chicago, Illinois 60616; Phone 312-567-3465; Bitnet: HUMMISA@IITVAX.

Let's Stay Together

SRA's membership secretary, Heidi Rohland, has lost track of some of you because you haven't informed her of your moves. If you or any member you know has changed addresses, please notify Heidi at the Secretariat (see address and telephone number on back page).

Positions Available

MATHES SEEKS RISK SPECIALIST

John Mathes & Associates, Inc., has opportunities for environmental scientists, toxicologists, and biostatisticians to perform risk evaluations and endangerment assessments in its suburban Pittsburgh, Pennsylvania, office. These assessments are part of on-going studies being performed for industrial and private sector clients. Position Specifications: Entry-level professional positions on the environmental engineering or environmental science staff. The successful candidates must have B.S. (M.S. preferred) in biostatistics, environmental science/engineering, or public health with course work from an accredited college or university, plus appropriate undergraduate degree, with academic preparation as follows: basic sciences, risk assessment/chemical hazard assessment, toxicology, applied statistical methods, and environmental chemistry. Knowledge of statistical computing techniques and data-base management is desired. Position is a salaried pay status, with eligibility for all corporate benefits, including incentive compensation, profit sharing, retirement program, 401K plan and advancement within a modern efficient office environment. Candidates must be legally authorized to work in the United States. Send resume to:

General Manager
John Mathes & Associates, Inc.
East Park One Building
701 Rodi Road, Suite 101
Pittsburgh, Pennsylvania 15235-4586
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CLEMENT ASSOCIATES HAS OPENINGS

Clement Associates, Incorporated, a leading national consulting firm renowned for its excellence in health and environmental risk assessment, audits, and science policy, has openings for mid and senior level professionals. Qualifications include a B.S. or M.S. in toxicology, environmental science or related field; a minimum of 2 years relevant experience; and excellent oral and written communication skills. IBM PC experience using dBase III or Lotus 1-2-3 a plus. Positions available include:

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Cindy Harrington, Technical Recruiter
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Calendar of Events

--September 6-8. **SHORT COURSE ON RISK ANALYSIS IN ENVIRONMENTAL & OCCUPATIONAL HEALTH**, Harvard School of Public Health, Boston, Massachusetts. \$650. Contact: Sharon E. Block, Harvard School of Public Health, 677 Huntington Ave., Boston, Massachusetts 02115. Phone 617-732-1171.

--September 11-13 (or 13-15). **ENVIRONMENTAL CONGRESS (The Experts Are Categorical)**, Paris, France. (See story in this newsletter.)

--September 12-14 (Cincinnati Convention Center) and September 27-29 (San Francisco Civic Auditorium). **HAZTECH INTERNATIONAL FOURTH ANNUAL HAZARDOUS WASTE & HAZARDOUS MATERIALS MANAGEMENT CONFERENCE & EXHIBITION**. Sponsored by: Institute for International Research, Inc., 13555 Bel-Red Road, C-96870, Bellevue, Washington 98009. Phone 206-746-4173; Fax 206-643-2146.

--September 13-15. **FIRST ANNUAL MEETING OF THE INTERNATIONAL SOCIETY FOR ENVIRONMENTAL EPIDEMIOLOGY**, Brookhaven National Laboratory, Upton, Long Island, New York. Contact: Leonard D. Hamilton, Building 475, BNL, Upton, New York 11973-5000. Phone 516-282-2003; Telex 6852516 BNL DOE.

--September 19-22. **ANNUAL INSTITUTE IN RISK MANAGEMENT IN ENVIRONMENTAL HEALTH AND PROTECTION**, University of Southern California, Institute of Safety and Systems Management, Los Angeles. Noncredit registrants: \$795. Submit applications by September 1 to: Robert Brown, ISSM, University of Southern California, Los Angeles, California 90089-0021.

--October 2-3. **ANNUAL MEETING OF THE INTERNATIONAL SOCIETY OF REGULATORY TOXICOLOGY AND PHARMACOLOGY**, Marriott Hotel, Washington, D.C. Theme: An Agenda for Improving Regulatory Progress. Contact: C. Jelleff Carr, 6546 Belleview Drive, Columbia, Maryland 21046. Phone: 301-992-9083.

--October 4-6. **ANNUAL INSTITUTE IN RISK MANAGEMENT IN ENVIRONMENTAL HEALTH AND PROTECTION**, University of Alabama (Tuscaloosa), Environmental Institute for Waste Management Studies. Noncredit registrants: \$795. Submit applications by September 18 to: I. Atly Jefcoat, Environmental Institute for Waste Management Studies, P.O. Box 870203, Tuscaloosa, Alabama 35487-0203.

--October 15-20. **ENGINEERING FOUNDATION CONFERENCE ON RISK-BASED DECISION MAKING**, Sheraton Santa Barbara Hotel, Santa Barbara, California. Contact: Harold Comerer, Engineering Foundation, 345 East 47th Street, New York, New York 10017. Phone 212-705-7835.

--October 23-27. **SEMINAR ON EVALUATION OF BUILDING FIRESAFETY**, Worcester Polytechnic Institute Center for Firesafety Studies, Worcester, Massachusetts. Contact: Richard Custer, Center for Firesafety Studies, Worcester Polytechnic Institute, Worcester, Massachusetts 01609. Phone 508-831-5593; Fax 508-831-5483.

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SRA Member Opens Office

SRA member Turkan K. Gardenier (Phone 703-255-0323) has opened a consulting office, TKG Consultants, Ltd., in Vienna, Virginia. She is offering an AI-oriented capability for designing and analyzing risk-related studies with minimal experimentation cost. The CTSS (Cumulative Transitional State Score) module is being used for graphical display of ongoing trends.



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Katie Ingersoll, *Production Assistant*

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Note: Contributions to the newsletter should be mailed
to the following address:

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Editor, RISK newsletter
Tec-Com
1303 Wilson Road
Knoxville, TN 37912
(Phones: 615-482-4640; 615-689-5315 [Res.])

Calendar of Events

(Continued from page 11)

--October 29-November 1. ANNUAL MEETING OF THE SOCIETY FOR RISK ANALYSIS, Hotel Nikko, San Francisco, California. (See story in this newsletter.)

--November 3-4. SECOND INTERNATIONAL CONFERENCE ON INDUSTRIAL AND ORGANIZATIONAL CRISIS MANAGEMENT, Leonard N. Stern School of Business, The Graduate Division, New York University. Sponsored by several organizations. Contact: Paul Shrivastava, NYU, Industrial Crisis Institute, Room 409, 90 Trinity Place, New York, New York 10006-1594. Phone 718-859-3435.

--December 12-13, FORUM ON RISK OF EXTREME EVENTS, Dupont Plaza Hotel, Washington, D.C. Sponsored by SRA. (See story in this newsletter.)

--December 12-16. WORKSHOP ON ENVIRONMENTAL RISK ANALYSIS, New Delhi, India. Organized by Indo-U.S. Subcommittee on Science & Technology. (See story in this newsletter.)

--March, 1990 (Tentative). SECOND BIENNIAL CONFERENCE OF SRA-EUROPE, Copenhagen, Denmark. Contact: Pieter Stallen, Institute for Environmental & Systems Analysis, Emmastraat 16, NL-1075, HT Amsterdam, The Netherlands (Phone +31 20 6620696; Fax: +31 20 751576).

--June 18-21, 1990. WORKING CONFERENCE ON ENVIRONMENTS FOR SUPPORTING DECISION PROCESSES, Budapest, Hungary. (See story in this newsletter.)

--June 18-22, 1990. 7th INTERNATIONAL CONFERENCE ON RELIABILITY AND MAINTAINABILITY, Brest, France. Sponsored by Commission of the European Communities; organized by French National Center for Telecommunication Studies. Contact: Secretariat, 7th Internat. Conf. Rel. & Maint., CNET/LAB/IFE, B.P. 40, F-22301 Lannion Cedex-France. Phone +33 96 05 24 30; Fax +33 96 05 23 72.

--June 28-29, 1990. 2nd EUROPEAN CONFERENCE OF INTERNATIONAL ASSOCIATION FOR IMPACT ASSESSMENT, Lausanne, Switzerland. Contact: L. Y. Maystre, Institut du Genie de l'Environnement, EPFL - 1015 Lausanne, Switzerland. Phone 021-693.27.11; Fax 6935060; Telex 4544778.

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