



RISK newsletter

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“Risk Analysis in an Interconnected World”

**Society for Risk Analysis
2001 Meeting, 2-5 December
Seattle—The Emerald City**

Robin Cantor, SRA President-elect

Spectacular scenery, wonderful food, and lots of interesting things to do await the participants in the 2001 Society for Risk Analysis (SRA) Annual Meeting to be held 2-5 December in Seattle, Washington. Plans for the Seattle meeting are quickly being finalized, and I believe that SRA members will find that the program has a lot to offer.

Seattle Attractions

Seattle, called the Emerald City, is a wonderful location for the SRA meeting. Interesting and comprehensive information on what to see and do while in Seattle can be found on the Seattle-King County Convention & Visitors Bureau Web site (www.seeseattle.org/visguide/emcity.htm). Some of the attractions mentioned on the site include:

Downtown Seattle

The Pike Place Market downtown is the oldest continually operating farmers’ market in the country, where farmers and craftspeople display their wares, anything from fish to vegetables and flowers to street performances. Up from the market is the commercial heart of Seattle, a lively downtown district of department stores, specialty shops, renovated historic theaters, hotels of every size, multiplex cinemas, espresso stands, restaurants, the Washington State Convention & Trade Center, and unexpected shopping experiences.

Seattle’s Waterfront

The Waterfront is home to Harbor Steps, several Piers, The Seattle Aquarium, and Washington State Ferries. Harbor Steps, a 16,000-square-foot staircase providing a pedestrian link between the Waterfront and the Seattle Art Museum, has eight waterfall fountains, extensive plantings, and inviting seating areas. The Piers offer many shopping and sight-seeing attractions, including a state-of-the-art international conference center, cruise ship home port, Anthony’s Pier 66 restau-

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Mt. Rainier—the dramatic backdrop to Seattle’s Elliott Bay



The Society for Risk Analysis (SRA) is an interdisciplinary professional society devoted to risk assessment, risk management, and risk communication.

SRA was founded in 1981 by a group of individuals representing many different disciplines who recognized the need for an interdisciplinary society, with international scope, to address emerging issues in risk analysis, management, and policy. Through its meetings and publications, it fosters a dialogue on health, ecological, and engineering risks and natural hazards, and their socioeconomic dimensions. SRA is committed to research and education in risk-related fields and to the recruitment of students into those fields. It is governed by by-laws and is directed by a 15-member elected Council.

The Society has helped develop the field of risk analysis and has improved its credibility and viability as well.

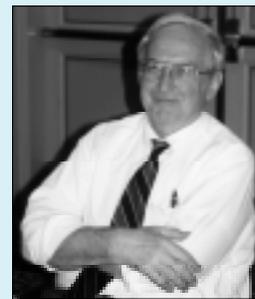
Members of SRA include professionals from a wide range of institutions, including federal, state, and local governments, small and large industries, private and public academic institutions, not-for-profit organizations, law firms, and consulting groups. Those professionals include statisticians, engineers, safety officers, policy analysts, economists, lawyers, environmental and occupational health scientists, natural and physical scientists, environmental scientists, public administrators, and social, behavioral, and decision scientists.

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**Society for Risk Analysis
Web Site
www.sra.org**

President's Message

The nomination of former Society for Risk Analysis president John Graham to be the director of the Office of Management and Budget Office of Information and Regulatory Affairs has been approved. His nomination cleared the appropriate committee many weeks ago but was prevented from coming to the Senate floor by a Senatorial hold. That was lifted and a vote was taken on 19 July. Confirmation is a signal that objective and well-done risk analysis is appreciated in the political process.



In May, I attended and presented at a Special Symposium on Quantitative Risk Assessment, sponsored by the Family Foundations of Chauncey Starr and B. John Garrick, held at the National Academies facility on the campus of the University of California, Irvine. Attendees included several past presidents: Betty Anderson, John Garrick, Warner North, and Elisabeth Paté-Cornell. Presenters included several recipients of the Distinguished Achievement Award: Chauncey Starr, John Garrick, and Stan Kaplan, as well as George Apostolakis, recipient of the Outstanding Service Award. Attendees included many longtime practitioners of quantitative risk analysis, including Bob Budnitz, Hal Lewis, and Richard Wilson. In addition to Paté-Cornell, session facilitators included Vicki Bier, the engineering area editor for our journal.

One objective of this symposium was to encourage more discussion of the applications of risk analysis to technical issues. This is quite timely, since on the national agenda are such issues as ballistic missile defense (BMD) and many associated with energy programs and policies, including drilling in the Arctic National Wildlife Refuge (ANWR), suitability of the proposed Yucca Mountain repository for high-level radioactive waste, extensive new pipelines, and many aspects of the debate on global warming. All have substantial opportunities for quantitative risk analysis to clarify options.

I encourage members working on these issues to share their expert work with others by submitting articles to our journal.

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rant, a marina, and Odyssey, the Maritime Discovery Center. Pier 56 is the gateway to Tillicum Village, a resplendently Northwest attraction. The Seattle Aquarium, with its underwater dome room and exhibits that range from a Pacific coral reef to cavorting sea otters, is next door to the Seattle IMAX Dome Theatre. Washington State Ferries carry passengers in cars, on bikes, and on foot. Tour companies offer sight-seeing cruises around the harbor and other Seattle waters.

Seattle Center

Seattle Center is the legacy of the Seattle World's Fair, the Century 21 exhibition in 1962. The Space Needle, with its observation deck and restaurants, has become the city's symbol, recognized around the world. At the Needle's base is 74-acre Seattle Center, the site of many civic festivals, the Pacific Science Center, with its IMAX Theater, Seattle Opera, The Children's Museum, Intiman Theatre, Pacific Northwest Ballet, Seattle Children's Theater, Key Arena, and Experience Music Project, an unorthodox museum that combines hands-on experiences with interpretive exhibits illustrating the creative process in American popular music. The Monorail provides a 90-second trip from Seattle Center to downtown.

Pioneer Square

Pioneer Square is Seattle's oldest neighborhood, now a historic district which houses many of Seattle's art galleries, restaurants, and taverns. Pioneer Square becomes an entertainment district after dark, with one of the city's liveliest collections of nightspots, from sports bars to hard-rock taverns to romantic eateries. This is also prime browsing territory, with stores offering everything from expensive antiques to handmade toys to books. The Underground Tour visits the sunken storefronts of

what was ground-level Pioneer Square before the Great Fire of 1889, and the Klondike Gold Rush National Historic Park is a small museum recalling the gold-seeker days of a century ago.

Chinatown/International District

The Chinatown/International District is a neighborhood with people of many cultures, including Japanese, Chinese, Filipinos, Southeast Asians, Koreans, and Pacific Islanders. This district has signs in several languages, shops, restaurants, parks, the Wing Luke Asian Museum, the Nippon Kan Theatre, and the Uwajimaya Market, a superstore of Asian foods and goods which includes a cooking school, a bookstore, and a sushi bar.

Seattle Neighborhoods and Beyond

There are many more interesting neighborhoods in the Seattle area, including Queen Anne, Capitol Hill, Lake Union, North Seattle, Lake Washington, Central Area/South Seattle, West Seattle, South King County, and Bellevue and the East Side.

Located near Seattle are Puget Sound, Olympic National Park, Mount Rainier National Park, Mount St. Helens and its National Volcanic Monument, Roslyn (the setting for the television series "Northern Exposure"), Stevens Pass, and the theme town of Leavenworth, a tasteful outpost of Bavarian oom-pah nestled in the Cascades.

SRA Member Excursion Activities

The SRA Secretariat will be putting together a number of optional excursion activities for meeting participants and their companions. For example, we are looking into eco-tours, kayak outings, and hiking and biking opportunities. We are also considering arrangements for wine tasting and touring of the local wineries. If you have ideas about excursions appropriate for meeting participants, please let me hear from you!

2001 SRA Annual Meeting

Plenary Sessions

I am confident that members will find the plans for the intellectual offerings at the Seattle meeting equally appealing. This year, we plan to have three plenary sessions, each of which highlights the general meeting theme, "Risk Analysis in an Interconnected World."

Monday Plenary

Monday's plenary session will focus on a set of issues that best highlights the economic and security risks of our interconnected world. Mr. Howard A. Schmidt, Corporate Security Officer for Microsoft Corporation in Redmond, Washington, will speak about information security. Schmidt currently directs the activity of those responsible for security of Microsoft's information, personnel, and facilities worldwide.

Prior to that he was a Supervisory Special Agent, Director of the Air Force Office of Special Investigations (AFOSI), Computer Forensic Laboratory and Computer Crime and Information Warfare. Under his direction the first dedicated computer forensic laboratory in the government was established. The Air Force specialized in conducting investigations into intrusions in government/military systems by unauthorized persons in counter intelligence and criminal investigations.

Before AFOSI, Schmidt was with the Federal Bureau of Investigation (FBI) at the National Drug Intelligence Center where he headed the Computer Exploitation Team as a Computer Forensic Specialist. As one of the early pioneers in the field of computer forensics and computer evidence collection,

he continues to provide training support to an international audience dealing with the new challenges around computer evidence collection and processing.

He was a city police officer from 1983 to 1994 with the city of Chandler Police Department in Arizona. While there he was detailed to the FBI academy, teaching classes in the use of computers in criminal investigations for approximately two years.

Schmidt served with the U.S. Air Force in various roles from 1967 to 1983, both on active duty and in the civil service. He has served in the military reserves since 1989 and currently serves as a Credentialed Special Agent with the U.S. Army Reserves, Criminal Investigative Division. He has testified as an expert witness in federal and military courts in the areas of computer crime, computer forensics, and Internet activity.

He holds a bachelor's degree in business administration and a master of arts in organizational management. He also has a technician-class Ham Radio License and a Single Engine Land pilots license.

Schmidt currently is the international president of the Information Systems Security Association and the recently formed Information Technology Information Sharing and Analysis Center. He is a former executive board member of the International Organization of Computer Evidence and served as the cochairman of the Federal Computer Investigators Committee. He is a member of the American Academy of Forensic

(Meeting Update, continued on page 4)

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Scientists, an advisory board member for the Technical Research Institute of the National White Collar Crime Center, and a distinguished special lecturer at the University of New Haven, Connecticut, teaching a graduate certificate course in forensic computing. He served as an augmented member to the President's Committee of Advisors on Science and Technology in the formation of an Institute for Information Infrastructure Protection. He is a regular international speaker in the fields of computer forensics and information assurance.

Schmidt was one of 29 industry leaders called to the White House to meet with President Clinton on cyber security and has testified before a joint committee on Computer Security and has been instrumental in the creation of public/private partnerships and information-sharing initiatives.

Tuesday Plenary

On Tuesday, Howard Kunreuther (Wharton School, University of Pennsylvania) will moderate a plenary session on "Improving Environmental Safety Through Third Party Inspections." A panel of distinguished speakers will focus on new approaches to partnerships in our interconnected world that blur the traditional public- and private-sector roles. Panelists will discuss opportunities and challenges in utilizing both the public and private sectors for addressing environmental risk issues with emphasis on the role that third-party inspections can play in combination with other risk management tools. By bringing together representatives of four critical groups (insurance, industry, government, and public interest organizations), the discussion is likely to stimulate a dialog on what future research and activities need to be undertaken to increase the chances that new programs and policies will be implemented. More specifically, the panel will focus on the following questions:

- How can we improve risk assessments as inputs to public-private partnership strategies for managing environmental risks?
- How do we incorporate the values and agendas of the different interested parties when developing risk management strategies for improving environmental safety?
- What role can risk management strategies, such as the use of third-party inspections, play in dealing with specific environmental risk problems?
- What are the implementation challenges associated with these strategies?
- How will these strategies affect the operations of businesses, the types of insurance policies that can be marketed, the future activities of regulatory agencies such as the U.S. Environmental Protection Agency (EPA), and the agendas of public interest groups?
- How can we incorporate the concerns of citizens and society in developing these risk management strategies?

Panelists include Larry Collins (Zurich Insurance), Phil Lewis (Rohm and Haas), Jim Makris (EPA), and Joe Minott (Clean Air Council).

Wednesday Plenary

On Wednesday, Ragnar Löfstedt (University of Surrey) will moderate another outstanding group of panelists on "An Analysis of the European Foot-and-Mouth Crisis: The core policy, risk management, and communication issues." This session will address probably the most salient example of the role of interconnectedness in a recent public policy crisis. Europe has undergone an unprecedented foot-and-mouth crisis and there

have been confirmed foot-and-mouth outbreaks in France, Ireland, Netherlands, and the United Kingdom (UK). In the UK alone, the scene of the worst foot-and-mouth outbreak to date, there have been more than a thousand confirmed cases and over 2.5 million animals culled. In this session, the six panelists (four from Europe and two from the United States) will discuss some of the core risk management, communication, and policy questions associated with the crisis. These include:

- Did the UK government regulators mishandle the crisis in its first month? If so, what should they have done instead?
- At the height of the crisis, what were the views of the UK public? Did they trust the farmers? Did they trust the regulators?
- Why was there not a coherent European Union policy on how to best deal with the crisis? For example, the Dutch advocated the use of vaccinations in some areas, while the UK was adamantly opposed.
- Why was the UK worse hit than its neighboring countries?
- What are the chances (if any) that the United States can be hit with a similar foot-and-mouth crisis?
- Were the precautionary measures taken by the United States (complete ban of all imported European meat products) justified?
- What are the chances of a similar foot-and-mouth crisis appearing again in Europe or elsewhere?
- What policy/risk lessons can be learned from this crisis?

Panelists include George Gray (Harvard School of Public Health), Tsegaye Habtermariam (Tuskegee University), Nick Pidgeon (University of East Anglia), Ortwin Renn (Center for Technology Assessment in Baden-Wuerttemberg), Michael Rogers (Forward Studies Unit of the European Commission), and Joyce Tait (University of Edinburgh).

Roundtables

A number of roundtables are also planned to give participants a more interactive platform relative to what is typically offered in the oral or poster presentation sessions. Presently, I have accepted several roundtable concepts. One is an education roundtable organized by Christina Drew (University of Washington) that will focus on (1) the needs of SRA student members and how the society might respond to those needs, (2) developing a list of key issues for students and a series of recommendations about meeting student needs, and (3) how best to initiate and continue the dialogue among students, potential students, and SRA leadership about education-related issues for the Society.

Another roundtable, organized by Jack Fowle (EPA) and addressing a continuing area of discussion in our Society, is "Integrating Science Into the Decision-Making Process." As an ad hoc committee of the SRA, the Public Policy Committee fosters and promotes knowledge and understanding of risk analysis and its application; exploration of policy, social, and economic implications of risk issues; and application of risk analysis, management, and communication techniques to protect human health and the environment. For the past several years the Committee has cosponsored Congressional briefings on topics related to risk assessment and its implications for public policy to inform public policy. During this roundtable, the Committee will summarize the briefings it cosponsored in 2001 with the American Chemical Society (ACS). Further, as one of the questions before the SRA is the extent to which it wishes to formally engage in providing scientific advice, a representative from the ACS will describe its efforts to "grow"

science advisors for legislators. This roundtable will explore the possible application of this activity for the SRA.

The summary of Congressional briefings will help inform members about some of the major risk-related issues facing Congress, emphasizing the Congressional/Executive/Legislative dialog to explore effective ways to provide science advice to inform policy. The "model" used by ACS and several other professional societies to interact with members of Congress will be highlighted to stimulate discussions about whether the SRA should establish mechanisms to formally engage Congress and other decision makers about the use of science to inform policy.

"Making Analysis and Discourse Work: Structured Approaches and Other Strategies" is a roundtable that will emphasize one of the most challenging methodological demands of our interconnected world. Tim McDaniels (University of British Columbia) and Robin Gregory (Decision Research) are the organizers and they will focus on a basic, yet troubling, question for the risk management community; that is, how to best implement integration of "analysis and discourse" into risk-management decisions. The session will start with a brief presentation by McDaniels and Gregory on an approach they have used in their recent work, termed a "structured decision process." They will offer some reflections on key issues such as how much structure to foster and how technical information can be integrated into stakeholder discussions. The roundtable format will promote an interactive discussion, with members of the audience invited to offer their views and experiences on ways to foster integration of analysis and discourse. The roundtable's goal is to encourage thoughtful conversations that offer new insights about how to implement effective stakeholder processes in complex risk decisions.

Regular Program

Regarding the regular program of the meeting, the Program Committee met on 6 June and successfully completed the demanding tasks of planning the presentation sessions. More than 450 abstracts were received by the 11 May deadline and reviewed by the committee. About 35 oral sessions, 3 poster sessions, 11 poster platform sessions, and 25 symposia were organized by the committee for the three-day program. Symposia topics include:

- Children's Risk: Assessment, Valuation, Management, and Communication
- Risk Science and Law: Annual Developments in Risk Regulation
- Economic Incentives, Innovation, and Foodborne Pathogen Risks
- Assessing Children's Risk From Environmental Exposures: A Framework
- Risk Science and Law: The Courts' Misunderstanding of Risk Science in Determining Causation and Harm
- When Model Meets Data in the Respiratory Tract—Part 1 and Part 2
- New Insights in Risk Perception—Part 1 and Part 2
- Public Participation
- Children's Risk to Environmental Toxicants
- Decision Modeling and Risk Communication/Risk Perception
- Collaborative Risk Analysis and Public Policy
- Precautionary Principle—Development in Law and Communication—Part 1 and Part 2
- Criteria for the use of Compound Specific Adjustment Factors
- Applying QSAR Models in Dose Response Assessment—Part 1

and Part 2

- Scientific Foundations of Comparative Risk—Part 1 and Part 2
- Risk Assessment in Nuclear Waste Management
- Applications of Geographic Analysis in Risk Assessment Management and Communication
- Risk Science and Law: International Trade and Risk Assessment
- Implications of Human Variability for Risk Assessment
- Connecting People and Information for LTS: Towards Integrative Practice
- Efficiency in Risk Management

I am very grateful to the Program Committee for its help and ask all SRA members to join me in thanking Melissa Frederick, Margaret MacDonell, John Keller, Eileen Mahoney, Henry Willis, Katherine McComas, Ann Bostrom, Gail Charnley, Sally Kane, Richard Belzer, Yvette Lowney, Paul Locke, Leslie Hushka, Ronald Brown, Stanley Levinson, Bruce Hope, Bob Fares, Greg Paoli, Annie Jarabek, Paul Schlosser, Peggy Coleman, Elizabeth Reese, Betty Anderson, Lori Strong, and Heide Scheiter-Rohland for their hard work! The preliminary program is expected to be available after Labor Day.

New Activities!

Finally, there are a number of new activities/procedures that have been incorporated into the program this year that I hope will enhance the experience for participants. First, the entire abstract submission process was conducted online. This greatly facilitated the review and organization of abstracts and will make production of the preliminary and final programs more efficient than the old process.

Second, SRA has implemented new registration procedures in response to an important area of concern raised by participants at past meetings. Many participants have told us that "no-shows" are a disrupting and frustrating experience at the meetings. Experience with other professional societies suggests that requiring speakers to pay their registration early is an effective way to reduce the number of last-minute cancellations for scheduled presentations. As a result, to ensure publication of their abstract in the Final Program this year, we will require speakers to register by the preregistration deadline, which is 2 November.

Third, SRA introduced the Best Paper Competition into the program this year. This is a new activity to encourage high-quality papers at the annual meetings and to ensure active recognition of the scholarship of our meeting participants. More than 35 speakers have requested consideration of their papers in the Best Paper Competition, and the Program Committee identified a number of additional papers whose authors SRA has encouraged to participate. To be eligible for the Best Paper Competition, speakers submitted a 5-10 page extended outline of their papers for review by members of the Program Committee by the 31 July deadline. A limited group of outlines will be selected from the submissions, and the authors of these papers will be invited to submit the full paper for review by 16 October. The final Best Papers will be selected from this group. All semifinal and final Best Papers will be given serious attention for publication in the journal *Risk Analysis*. I believe that the Best Paper Competition is an important extension of the program of the annual meetings and it will help stimulate additional scholarship and interest in the SRA community.

I invite members to give me their feedback on the program plans and let me know any suggestions that you may have for improving this event. I look forward to seeing you in Seattle! <<>>



News and Announcements

Early Career Award in Neurotoxicology

The Society of Toxicology announces the availability of the Early Career Award in Neurotoxicology. This award, sponsored by the American Chemistry Council, provides up to \$100,000 support to encourage persons beginning their professional careers to conduct research on topics that will improve the scientific basis for risk assessment and decision making with respect to the potential neurotoxicity of chemicals. Scientists with research interests in neurotoxicology and full-time faculty positions at accredited North American institutions granting graduate degrees are eligible. Complete description and the application form are found at <http://www.toxicology.org/Information/AwardsFellowships/awardsponsored.html#acean>. Deadline is 9 October 2001.

Workshop on Modeling of Developing Systems

"XXVI International Workshop on Modeling of Developing Systems: Analysis and Management of Ecological, Technogenic, and Telecommunicational Risks—Problems of rehabilitation and recreation of Chernobyl Exclusion zone" will be held in Liptovshy Mikulash, Slovak Republic, 25-28 February 2002. Registration should be made by 1 October 2001.

The deadline for submission of abstracts is 1 December 2001. For more information contact the Organizing Committee: Glushkov Institute of Cybernetics of the National Academy of Sciences of Ukraine, Glushkov Prospekt 40, 03680 Kiev-187, Ukraine; phone: +0038 044 266 2113; email: janintas@carrier.kiev.ua; Web site: <http://www.ln.com.ua/~janintas>.

Comparative Risk Assessment and Environmental Management

Comparative Risk Assessment and Environmental Management will be held in February 2002 in Egypt. For more information: linkov.igor@adlittle.com.

Risk Analysis for Invasive Species

"Risk Analysis for Invasive Species" will be held 21-23 October 2001 in Las Cruces, New Mexico. This is a joint workshop of the Society for Risk Analysis and the Ecological Society of Americas, sponsored by the U.S. Department of Agriculture Office of Risk Assessment and Cost Benefit Analysis and New Mexico State University. For more information: mpowell@oce.usda.gov.

Society for Risk Analysis Principles for Risk Analysis Approved by SRA Council

The Society for Risk Analysis Council has voted to approve the following principles, making them official SRA principles.

Risk analysis applies methods of analysis to matters of risk. Its aim is to increase understanding of the substantive qualities, seriousness, likelihood, and conditions of a hazard or risk and of the options for managing it. Risk analysis is both a profession and an intellectual discipline. These principles are meant to guide both the practice and uses of risk analysis.

- (1) Risk analysis uses observations about what we know to make predictions about what we don't know. Risk analysis is a fundamentally science-based process that strives to reflect the realities of Nature in order to provide useful information for decisions about managing risks. Risk analysis seeks to inform, not to dictate, the complex and difficult choices among possible measures to mitigate risks. Risk analysis enriches fair and transparent deliberative decision-making processes in a democratic society.
- (2) Risk analysis seeks to integrate knowledge about the fundamental physical, biological, social, cultural, and economic processes that determine human, environmental, and technological responses to a diverse set of circumstances. Because decisions about risks are usually needed when knowledge is incomplete, risk analysts rely on informed judgment and on models reflecting plausible interpretations of the realities of Nature. We do this with a commitment to assess and disclose the basis of our judgments and the uncertainties in our knowledge.
- (3) Risk analysis relies on both basic and applied research, often integrating information, theories, and analytic tools from a variety of disciplines. As we apply information and tools from diverse disciplines, we seek to give due respect and acknowledgment to the intellectual contributions of those fields while using information standards and criteria appropriate to the policy choices that are at issue.
- (4) Risk analysts are committed to maintaining and building our professional community as we contribute to advances in our field. We review the work of our peers and help students develop their skills and values. Unless prohibited, we share the data underlying our published analyses in order to facilitate independent reassessment of our own conclusions.
- (5) The relationship of risk analysts to the sponsors of our efforts is subordinate to our commitment to fairly assess and discuss the risks that are the subjects of our analyses. Risk analysts openly acknowledge our sponsors and our sources of data and support.



Regulatory Risk Review

Groping Toward Science and Values

“Science without religion is lame, religion without science is blind.” – Albert Einstein

David P. Clarke, American Chemistry Council

If we replaced the word religion with the word values in the above quote, Einstein’s sentiment would capture the widely shared view of environmental decision making today. It is well understood that public values, risk perceptions, and other non-factual issues matter in setting the environmental policy agenda; it is equally well understood that scientific knowledge is a necessary foundation for sound environmental decision making. A number of developments in recent months have underscored the need for improvements in both areas.

As described in the last RISK newsletter, Rep. Vernon Ehlers (R-MI) early this year introduced legislation in the House to strengthen science at the Environmental Protection Agency (EPA). Recently, on 12 July, Senators George Voinovich (R-OH) and Thomas Carper (D-DE) introduced a companion Senate bill, S. 1176. Both bills’ core provisions originated with a National Academy of Sciences committee whose basic conclusion was that science needs more “clout” in environmental protection decisions. Keeping her options open, EPA Administrator Christine Todd Whitman has withheld judgment as to whether the Bush administration would support the legislation, which would establish a Deputy Administrator for Science at EPA.

In a 24 July Senate Governmental Affairs Committee hearing on legislation to elevate EPA from an independent agency to a Cabinet-level department (S. 159, H.R. 2438), most witnesses (including Whitman and two former EPA administrators) strongly endorsed EPA elevation *and* strengthening science at the Agency. But the witnesses also called for a “clean bill,” cautioning that adding the Deputy Administrator for Science legislation to the EPA Cabinet bill could derail it.

Notwithstanding her reluctance to endorse the Deputy Administrator for Science legislation, Whitman nevertheless is keen on strengthening science at EPA. The administrator is reviewing a set of proposals developed by Agency staff that, among other things, aims to strengthen the Agency’s use of science in its regulatory development process, proposals that may be Whitman’s implicit response to H.R. 64 and S. 1176.

EPA’s 15 June “Task Force Recommendations for Improving EPA Regulations,” awaiting Administrator Whitman’s blessing, notes that the credibility of the Agency’s decisions depends on the science and analysis underlying its regulations. To bolster that credibility, the Task Force recommends reliance on an “analytic blueprint”—a “workgroup plan for obtaining data and scientific research, analyzing risks and economic impacts, and conducting other analyses required by statute or Executive Order.” The blueprint proposal was developed early in the previous administration but, for reasons unknown, was never implemented. Besides calling for the revitalization of the blueprint as a management tool, the Task Force suggests that Administrator Whitman should “establish a clear role for science in EPA decision making,” in part by designating an EPA Science Advisor to “broker the use of science in EPA decisions” and direct cross-Agency strategic planning for sci-

ence. The report suggests an equivalent EPA Economic Advisor. Another important Task Force theme is that EPA needs more effective consultation with “EPA policy advisors, coregulators, and external stakeholders.”

Focusing not on EPA but on the nation’s lawmakers, a high-level group convened in June by Carnegie Mellon University and other organizations discussed ideas for “Creating an Institutional Structure to Provide Science and Technology Advice to Congress,” exploring various institutional models to help legislators deal with increasingly complex scientific and technical issues. At Carnegie Mellon’s 14 June gathering, which included representatives from the Executive and Legislative branches as well as from numerous scientific organizations, participants delved into the question of how best to provide “balanced, independent scientific and technical advice to Congress” in complex areas where legislators will need analysis, not a bare summary of facts. These include such areas as better use of science, benefit-cost analysis, risk analysis . . . Internet policy, Defense policy, Space policy. The meeting was intended to start a dialogue on the critical question of how to satisfy the clear need for Congress to receive credible scientific advice.

During this same recent period, EPA undertook a “National Dialogue on Public Involvement in EPA’s Decisions.” From the innovative 10-day online dialogue—which ran 10-20 July—EPA hopes to learn more about how best to engage the public in its regulatory, permitting, and other deliberations. EPA’s 10-20 July national dialogue marks a significant development in the Agency’s revived attempts to craft and implement a clear, structured approach to public dialogue on environmental policy. The dialogue will be posted at <http://www.networkdemocracy.org/epa-pip> and may set a precedent for how EPA learns what’s on people’s minds.

In related developments, the General Accounting Office issued a report 16 July that examined the EPA Science Advisory Board’s practices for preventing conflict of interest and bias in its advisory panels. The report concluded that improved policies and procedures are needed to ensure independence and balance. Similarly, EPA’s Office of the Inspector General (OIG) is weighing the possibility of conducting a study on the Agency’s use of science in rulemaking and how science has impacted the quality of EPA rules, an OIG scientist told EPA’s Science Advisory Board, Research Strategies Advisory Committee, at a 26 June meeting. Such a study, if conducted, would be part of Administrator Whitman’s broad initiative to improve the Agency’s use of science.

With growing awareness of the important roles science and values provide in how we understand whether a problem exists, what factors influence the problem, and how we best manage it, small wonder that the focus on these two aspects of environmental decision making have become so central to policy debates. With good will and a genuine commitment to problem solving, the fabric of regulatory decisions will be stronger when solid science and clear values are closely woven together. <<<<



Specialty Groups

Ecological Risk Assessment Specialty Group

Bruce Hope, Chair

By the time this RISK newsletter reaches you, a preliminary program for this year's Society for Risk Analysis (SRA) Annual Meeting in Seattle, Washington (2-5 December 2001), should be on the SRA Web site, listing a wide variety of workshops and sessions. So here, I'd like to call your attention to activities sponsored by the Ecological Risk Assessment Specialty Group (ERASG).

There will be two workshops on Sunday (2 December): "Practical Applications of Bayesian Methods in Ecological Risk Assessment" (Bob Fares and John Toll, organizers) and "Ecological Risk Assessment in Arid Ecosystems" (Jim Markweise and Randy Ryt, organizers). There will be a large poster session in the busiest area of the conference center.

Seven platform sessions will cover a wide range of ERA-related topics: (1) "ERA for Management of Large-Scale Systems" (Wayne Landis, session chair), (2, 3) "ERA and Salmon Recovery" and "ERA for Endangered Fish" (Anne Fairbother and Charles Wisdom), (4) "Emerging Issues in ERA" (Bill van der Schalie), (5) "Soil Screening Level Development Methods" (Brad Sample), (6) "ERA for Sediments" (Sue MacMillan), and (7) "Ecological Risk Management Frameworks" (Bob Fares). On Wednesday (5 December), and for the first time, ERASG will have a poster/platform session on "Practical Issues in ERAs," cochaired by Bill Alsop and Gordon Robilliard, with eight speakers covering topics from pulp and paper mills (a regional favorite) to probabilistic risk evaluation.

The ERASG business meeting, followed by the Section mixer, will be held the evening of Tuesday, 5 December, immediately following the last ecological session of the day.

Dose-Response Specialty Group

Paul M. Schlosser, President

On Tuesday, 5 June, the Dose-Response Specialty Group (DRSG) held its second tele-forum for 2001. Ron Brown (DRSG president-elect) organized a set of presentations to summarize the four sessions held at the Issues and Applications in Toxicology and Risk Assessment meeting, held 23-26 April in Fairborn, Ohio. The presenters and topics were John Lipscomb (EPA)—"Derivation of Office of Water Health Advisories for Short-Term Exposure Periods," Peter Robinson (ManTech)—"Chemical Mixtures Risk Assessment: Current Approaches and Emerging Issues" (slides uploaded to the DRSG Web site), Jeff Swartout (EPA)—"Integrating Toxicokinetics and Toxicodynamics in Mechanistic Risk Assessment," and Gary Kimmel (EPA)—"Assessment of Risks to Children from Exposure to Environmental Agents."

The DRSG holds teleconference meetings the first Tuesday of each month from 3:30 to 4:30 p.m. (EST). Our next teleforum will be Tuesday, 4 September, when Dr. Jim Wilson (Resources for the Future) will lead a discussion of the question "What Doses of Dioxin-Like Chemicals Cause Chloracne in Humans?" As a basis for the discussion, Wilson will contrast and compare ED50 values derived from animal studies with those estimated from a study of 146 individuals who in-

gested polychlorodibenzofuran-contaminated cooking oil in an incident in Japan in 1968. The call-in number is 202-260-7280, access code 0577#. All are welcome to participate. Contact Paul Schlosser at schlosser@ciit.org if you would like to be added to our email list, which includes announcements of upcoming events and distribution of supporting materials for the tele-forums, or if you have a topic you would like to present at one of our tele-forums.

Risk Communication Specialty Group

Ann Bostrom, Chair

A wealth of risk perception and communication submissions this year enabled the Risk Communication Specialty Group (RCSG) to schedule almost two full tracks of symposia and sessions for the December SRA meeting. Topics range from risk perceptions of future carbon management technologies to human cloning and values, perception and communication of public health risks, risk communication in newspapers, stakeholder participation in watershed management, and social trust. The RCSG will be cohosting a joint mixer with the Risk Science and Law Specialty Group and will hold its annual business meeting in Seattle as well. We invite all SRA members to these activities and welcome volunteers and nominations for chair-elect and executive committee membership in the RCSG. Please contact Chair Ann Bostrom (ann.bostrom@pubpolicy.gatech.edu) or Chair-elect Katherine McComas (mccomas@wam.umd.edu) with your ideas or questions.

Risk Science and Law Specialty Group

Wendy Wagner, Chair

The Risk Science and Law (RSL) Specialty Group has been busy planning for the 2001 Annual Meeting. This spring, the Specialty Group submitted four symposia for the annual meeting in December, two of which it is cosponsoring with the Risk Communication Group. The first symposium submission is titled "International Trade and Risk Assessment" and will explore a number of the science-policy challenges that arise when international institutions review a country's risk-based measures for protecting health, safety, and the environment. The second symposium, titled "Annual Developments in Risk Regulation—ATA, Arsenic, and Wetlands," will showcase five speakers who will discuss the most important regulatory developments occurring at the intersection of risk science and law over the past year. In a third, cosponsored symposium, "The Courts' Misunderstanding of Risk Science in Determining Causation and Harm," four speakers from government and academia will explore a variety of errors that the courts regularly commit when their legal decisions depend on risk science. In the fourth symposium, which was organized by our able cosponsor, the Risk Communication Specialty Group, top science and law experts will discuss the "Precautionary Principle: Developments in Law and Communications."

The Specialty Group is also working with the Risk Communication Specialty Group on plans for a joint mixer at the Seattle meeting. The speaker(s) and related details are still under construction, but the mixer promises to be a grand event. Further information will be emailed to RSL members this fall.

Finally, the RSL Specialty Group is publishing a mini-symposium, consisting of five papers presented at the Specialty Group's three symposia at the 2000 Annual Meeting, in a forthcoming issue of *Risk Decision and Policy*, a journal of Cambridge Press.

Membership in the Risk Science and Law Specialty Group

is still free and the email list is used sparingly (you will be contacted by email no more than three times a year). If you would like to join the Specialty Group, or if you have ideas or questions, please contact Wendy Wagner via email at wagner9@attglobal.net or by phone at 440-892-3433 or fax at 440-892-1158. <>>



SRA-Europe

“New Risk Frontiers for a New Europe” Report from the 11th Annual Conference of the Society for Risk Analysis-Europe

Anne Brueggemann, Information Officer

This year's annual Society for Risk Analysis-Europe (SRA-Europe) conference was held 23-27 May in Lisbon, Portugal. The meeting at this beautiful location was hosted by Jose Palma, President-elect of SRA-Europe. The relaxed and informal atmosphere, together with a relatively modest number of participants, allowed for lots of room and opportunities for interesting and in-depth discussions.

The SRA-Europe members were especially pleased to see such a strong representation from our American colleagues in the SRA.

So where are the new risk frontiers? The opening panel discussion provided a guiding orientation. Robin Cantor (SRA International President-elect), Gail Charnley (SRA International Past President), Michael Rogers (European Commission), and Joyce Tait (SRA-Europe Past President) offered their views on problems and opportunities for risk sciences.

Joyce Tait named four important cornerstones: science, values, governance, and the precautionary principle (PP). Among these, the potential fields of conflict can be outlined as follows:

Europe has been experiencing a political trend in many spheres away from top-down, hierarchical, command-and-control (*government*) to less hierarchical, less directive, and more flexible approaches (*governance*). Governance implies devising a risk or other management system where the parameters are set so as to encourage key actors to behave in the desired manner, and the underlying assumption is that these parameters can be improved incrementally until the system operates in the desired manner.

In Europe and North America, perceived failure of, or difficulties with, some forms of top-down regulation led to the deregulation policies of the 1980s and 1990s and a shift from government to governance-based approaches. However, in other cases, similar difficulties led to demands for a more precautionary approach, resulting in an increase of the degree of direct control of risk management by governments. In a few cases, these two movements in opposite directions have met head-on and are creating tremendous amounts of turbulence. Such conflicts are often presented as a clash between science-based and value-based perspectives, but science is used equally effectively on both sides of these debates.

The major research questions raised in the discussion fall within this field: What is the role of science and expertise in decision making? How do values enter into decisions and how should science and values be balanced? What are the implications of changes in European policy decision making, that is, the evolution from government to governance? How can risk-

based or science-based approaches to risk regulation and management on the one hand and the PP on the other hand be bridged? What role should the PP play in regulation and where should the limits of precaution be located? How can risk research meet policy needs better? Consensus between the panelists was high concerning these major challenges for risk science, the European perspective obviously matching the U.S. perspective.

The following two days of the conference included 24 sessions with about 80 presentations and 25 posters of an overall remarkably high standard. The session topics included disaster adaptation, economic and insurance risk, electromagnetic fields, experts and risk, genetically modified food, hospital risks and perception, individual factors and risk behavior, industrial risk and emergency control, radioactive and nonradioactive health risks, risk assessment, risk communication, risk decision process, risk management, and risk policy (uncertainty and precaution).

The business meeting informed us about news in the European section of the SRA:

Three new members were welcomed on the executive committee: Peter Allen (Universities of Kent and Surrey, UK), Jan Gutteling (University of Twente, Enschede, Netherlands), and Anna Vari (Hungarian Academy of Sciences, Budapest, Hungary).

Jose Palma stressed the need for a professional secretariat for SRA-Europe. It is anticipated that the secretariat will be at In Conference Ltd. in Edinburgh and its work is expected to be taken up within the next months. The first task would be a major recruitment campaign for SRA-Europe membership.

Next year's SRA-Europe Conference will be held 21-24 July in Berlin, Germany, and will be hosted by Peter Wiedemann (Research Center Juelich, Germany; Treasurer of SRA-Europe and Councillor of SRA International). The focus will be on “Integrated Risk Management: Strategic and Organisational Perspectives.” The list of proposed topics includes holes in holistic risk management, frames and risk controversies, integrating PP in risk-based decision making, opening the process—integrating stakeholders and stakeholders, uncertainty, future and real options, early recognition of risks and rare events, and risk management of intangible assets.

The conference venue will be the Humboldt University in former East Berlin. Once again, we are looking forward to a meeting in exceptional surroundings.

The highlight and end of this year's conference was a great dinner in a 17th-century fortress in Sétubal (which happens to be the hometown of our host), including traditional Portuguese music—“Fado”—and a wonderful ocean view. <>>



Journal Notes

Call for Nominations for Area Editor for *Risk Analysis: An International Journal*

Please submit nominations for potential Area Editor for Engineering candidates to Elizabeth L. Anderson, Editor-in-Chief, *Risk Analysis: An International Journal*, 1800 Diagonal Road, Suite 500, Alexandria, VA 22314; phone: 703-684-0123; fax: 703-684-2223; email: elanderson@sciences.com. The term will be for a three-year appointment.

The current Area Editor, Vicki Bier, will be completing her second term appointment shortly. The new Area Editor will need to commence a phase-in role by late this fall.



Committees

History Committee

Paul Deisler, Cochair

After many months of gathering and absorbing information and attempting to put it into order, significant progress is being made on the preparation of a history of the Society for Risk Analysis from events leading to its foundation in 1980 through the end of 2000. The three Historians—Paul Deisler, Dick Schwing, and Jeanne Kasperson—are working to the same tentative, agreed-upon outline, each on their separate parts, using the results of interviews, written submissions, and several types of records of the past. Even though there are gaps in the records, enough is on hand to complete a history as work to date shows. They make no prediction about when a first, readable, reviewable draft will become available but will be able to make a more detailed report, perhaps containing such a prediction, in the next issue of the *RISK newsletter*. <>>



Member News

Tim McDaniels, Nick Pidgeon, and Elke Weber

Editors of *Risk Decision and Policy*, a journal established in 1994 at Oxford University, are Paul Anand, Tim McDaniels, Nick Pidgeon, and Elke Weber. The journal is recommended reading for all those with an interest in the problems of risk, decision making, and policy in a variety of disciplines including decision science, mathematics, economics, psychology, environmental policy, public health, and statistics. The journal is published by Cambridge Press, <http://journals.cambridge.org>.

Jeanne X. Kasperson and Roger E. Kasperson

Jeanne X. Kasperson and Roger E. Kasperson are editors of *Global Environmental Risk*, part of the Risk, Society, and Policy Series published by Earthscan Publications Ltd., which presents a comprehensive analysis of environmental risks. Contributors assess the identification and causes of risks, who and what is vulnerable to them, their regional distribution, and the policies and measures for mitigating them. The editors provide an extensive introduction to the issues and introductions to each part, showing that while global risk futures may be unavoidable, they are still amenable to risk analysis and carefully designed policies for amelioration.

George Cvetkovich and Ragnar E. Löfstedt

George Cvetkovich and Ragnar E. Löfstedt are editors of *Social Trust and the Management of Risk**, which explores the importance for trust of various influences, from individual perceptions to organizational systems, and considers the conditions involved in building or undermining trust. Several authors examine practical hazard management issues, including medical vaccination programs and popular participation in pollution control and waste management as strategies for enhancing social trust.

Ortwin Renn and Eugene A. Rosa

In *Risk, Uncertainty and Rational Action** by Carlo C. Jaeger, Ortwin Renn, Eugene A. Rosa, and Thomas Webler, these four social scientists present a fundamental critique of the prevailing approaches to understanding and managing risk—the “rational actor paradigm.” They show how these must incorporate the competing interests, values, and rationalities of those involved and find a balance of trust and acceptable risk.

Ragnar E. Löfstedt and Lynn Frewer

*The Earthscan Reader in Risk & Modern Society**, edited by Ragnar E. Löfstedt and Lynn Frewer, brings together seminal contributions on risk analysis, accompanied by an extensive editorial introduction laying out the issues for different areas of risk research and a framework for interpreting them. The book has 11 chapters plus a list of further reading.

*Published by Earthscan Publications Ltd.



Chapter News

Ohio Chapter

Patricia Nance, Secretary
Kenneth Poirier, Treasurer

Ohio Chapter Web Site

The Ohio Chapter of the Society for Risk Analysis (OSRA) would like to announce the opening of its new Web site at www.geocities.com/ohiosra. Please go and check it out! It is still under some construction to make it better, so if you have any comments or suggestions, please let me know, for not only am I the Secretary but also the new Webmaster. You can email me at nance.patricia@epa.gov.

EPA/DOD Toxicological Conference

The OSRA presented a poster at the annual EPA/DOD Toxicological Conference held 23-26 April in Fairborn, Ohio. The conference was attended by a variety of professionals in the risk assessment field from federal government, state, and private agencies. The poster was designed and prepared by a few of the members of the Ohio Chapter Executive Committee: President Femi Adeshina, Councilor Ed Pfau, Councilor Deborah Gray, Secretary Patricia Nance, and Past President Glenn Rice. The poster consisted of a brief history of the development of the OSRA, an overview of the National SRA, OSRA Bylaws, OSRA Executive Committee, Current OSRA Member Affiliations, Past OSRA Events, Calendar of Current/Future OSRA Events, How to Join, and the SRA and new OSRA Web sites. A trifold brochure was created with most of this same information, including a miniature OSRA membership form. These brochures were attached to the poster to allow anyone attending the conference to take the OSRA information with them. The poster was a great success. At the end of the conference, OSRA had obtained seven new members.

“Physiologically Based Pharmacokinetic Modeling”

OSRA teamed with the Wright State University's Institute for Environmental Quality and the U.S. Environmental Protection Agency, Office of Research and Development's National Center for Environmental Assessment (EPA/ORD/NCEA)-Cincinnati, to host a workshop titled “Physiologically Based Pharmacokinetic (PBPK) Modeling” on 24 May 2001 at Wright State University. OSRA was awarded a \$1,000 grant from the EPA/ORD/NCEA-Cincinnati for use in the development and presentation of this workshop. The workshop was announced throughout the OSRA membership and surrounding organizations and universities.

This all-day workshop was comprised of a morning lecture session followed by an afternoon hands-on computer session. The morning session consisted of four lectures on the background and significance of PBPK modeling. The afternoon session consisted of using the ACSL software to run simulations and to learn how the software operates in computational situations. Mike Gargas and several other scientists from the Sapphire Group, along with Jim McDougal of Geo-Centers Inc., donated their time to educate OSRA members and others about PBPK modeling.

Dr. Michael L. Gargas (Sapphire Group, Inc.) provided a history of and the principles of PBPK modeling. Basic concepts were introduced to the class and the development of com-

partmental models was discussed. The background material provided a history up to the 1984 Ramsey and Andersen model that was based on the physiological modeling of volatiles by Haggard (1924), Kety (1951), Mapleson (1961), Riggs (1963), and Fisgerova-Bergerova (1974) and the physiological modeling of drugs of Teorell (1927), Bischoff (1971), Dedrick (1973), and Rowland and Wilkinson (1975). The concept of mass-balance in PBPK modeling was iterated in conjunction with the compartments of blood and metabolite flow in the model. In particular the case study of methotrexate was presented as a case study, as was that for styrene. In the final analysis the linking of exposure to risk assessment via PBPK was discussed, as was the implications for utilizing these analyses in risk assessment calculations. This model provides support for the extrapolation of tissue dosimetry for high to low doses, dose routes, exposure scenarios, and interspecies extrapolations.

Dr. Christopher Kirman (Sapphire Group, Inc.) presented material on using PBPK modeling to evaluate allometric scaling practices in risk assessment. A history of allometric scaling was presented along with general equations that are used in scaling operations. Biological processes that scale allometrically, such as renal clearance, were presented along with volume of distribution, half-life, heart rate, circulation time, respiration rate, and life expectancy. Limitations to the system were also discussed. An evaluation of allometric scaling using PBPK modeling was presented for ethyl glycol methyl ether, methylene chloride, and trichloroethene. Model simulations for both rats and humans are conducted across a broad range of trial exposures and a compilation of estimates of internal dose for a variety of dose measures are gathered. What was demonstrated was that allometric scaling fails to capture behavior of dose-ratios where saturable kinetics is observed. Moreover, the appropriateness of allometric scaling is dose-dependent.

Dr. Lisa Sweeney (Sapphire Group, Inc.) provided information on the use of PBPK modeling in the derivation of acceptable human exposures. PBPK modeling is a step in the process of determining risk assessment values such as OELs, RfDs, RfCs, and cancer slope factors. PBPK models are used to refine the definition of dose, perform interspecies extrapolation, assess the impact of variability, account for differences in exposure scenario (timing, dose), and perform route-to-route extrapolation. A case study of ethylene glycol monomethyl ether (EGME) was presented. EGME is a rodent developmental and reproductive toxicant and has an extensive rodent experimental database. The mode of action is identified along with the NOAEL and relevant metrics is determined for use in the PBPK model. These data are then used to construct an OEL calculation based on a PBPK Monte Carlo approach. The benchmark dose is used to determine the NOAEL and the lowest human-equivalent exposure to be health protective is selected. Once the metrics are run through the PBPK model, a human equivalent concentration of 12 ppm is established. Appropriate uncertainty factors are applied for animal to human extrapolation and adjustment for human variability to yield a time-weighted average exposure limit of 0.9 ppm for EGME. The key point from this model discussion is that PBPK modeling is a tool that can aid in the selection of the critical study, interspecies extrapolation and for the selection and refinement

of uncertainty factors. However, it requires expert judgment to evaluate the mode of action, evaluate model quality, and verify that the model is applied appropriately.

Dr. James McDougal (Wright State University) summarized the dermal models used in risk assessment. The skin is an organ system that is an exposure route and needs to be addressed properly in order to accurately estimate internal dose assessment, route-to-route extrapolations and to assess dermal exposure levels. Within skin, variations exist among thickness and absorption depending on the location of the body. Thus, penetration is affected by physiochemical factors (molecular size, partition coefficients, evaporation) and physiological factors (diffusion path length, blood flow, metabolism). In skin, the PBPK model adheres to Fick's Law, which assumes a homogeneous infinitely thin membrane, flux through the skin, and steady-state measurements. Nonetheless, for internal dose assessments, a dermal PBPK model should be used if there is a need for accuracy and the parameters are available.

The afternoon session was conducted in the Wright State University computer lab with hands-on computer modeling exercises conducted using the ACSL software. Kirman conducted the exercise on internal vs. external dose plots and dose-ratio plots. The exercise was set up to illustrate how first and second pass detoxification mechanisms affect the results that are obtained by modeling. The exercise demonstrated how saturable enzyme systems allow for the spillover and induction of secondary metabolic pathways such as glutathione conjugation. Peak concentration in the blood and area under the curve expressions are altered depending on where in the time course the measurements are taken. This exercise was designed to help the student understand these processes.

Sweeney provided a hands-on session of the use of Monte Carlo simulation and interspecies extrapolation. The exercise demonstrated how the use of multiple analysis could be used to predict behavior and activity of a chemical at different concentrations. Furthermore, the model can be used to determine concentrations that in humans correspond to similar effects in animal models.

McDougal used a skin model to demonstrate how dermal factors can vary and how they can affect the amount of parent compound or metabolite in the organism. Surface area, venous concentration, and evaporation are just a few of the variables that can determine how much of a substance is absorbed.

Philadelphia Chapter

Eileen Mahoney, Cochair

The Philadelphia Chapter has positions open on the Executive Committee for the upcoming year. Anyone interested in helping organize upcoming meetings should contact Eileen Mahoney (215-242-4388 or emahoney@riskassessment.net).

Research Triangle Chapter

Paul Schlosser, President

The Research Triangle Chapter (RTC-SRA) held a mini-symposium on Saturday, 28 April, in conjunction with the North Carolina State University (NCSU) graduate course, Environmental Exposure and Risk Analysis, taught by Dr. H. Christopher Frey (Civil Engineering) and Dr. Man-Sung Yim (Nuclear Engineering). Students from the class presented posters on individual research projects covering a wide vari-

ety of topics. Members of the RTC-SRA judged the posters and, while there were many good presentations, they chose a poster by Yuchao ("Maggie") Zhao for her analysis of "Emission and Exposure of Benzene in Urban Areas" as the winner. Ms. Zhao was presented with a cash prize for this award. A keynote talk was also given at the symposium by Dr. John Vandenberg, Acting Director of the Experimental Toxicology Division, NHEERL, ORD, EPA, and Councilor of SRA. Vandenberg spoke on the topic "Air Pollution: Major Challenges, Key Opportunities."

On 9 May, the chapter sponsored a seminar by Dr. Heejeong Latimer, North Carolina State University, on "Quantitative Microbial Risk Assessment for Human Salmonellosis Associated With the Consumption of Raw, Shell Eggs." Latimer described an integrated mathematical model that includes two primary factors influencing the rate of *Salmonella* (SE) growth in shell eggs: the time to loss of yolk membrane integrity and the rate of SE growth. Monte Carlo simulation was used to account for variability in temperature and time parameter values and for uncertainty in the estimated SE exposure levels, and the dose-response assessment was based on human feeding study data using a disease endpoint. The analysis suggests that risk-reduction can be achieved by control of temperature throughout egg processing and distribution, as well as reduction in on-farm contamination.

The chapter also awarded a graduate student travel award for attendance at this year's SRA annual meeting, based on submission of extended abstracts to the chapter. The award went to Michael Zager, Applied Mathematics, NCSU, for his abstract, "Modeling the Lag in Biliary Excretion of the Phytoestrogen Genistein in Rats."

Details of upcoming events and information on joining our chapter can be found via our Web site (<http://www rtc-sra.org>). Contact Paul Schlosser at schlosser@ciit.org if you would like to be added to our email list or are otherwise interested in joining chapter activities.

Greater Pittsburgh Chapter

Lee Ann Sinagoga, Secretary

Update on Current Officers

The current officers of the Greater Pittsburgh Chapter of the Society for Risk Analysis include President Beth Dutton (Michael Baker Corporation), President-elect Paul Scott (Blasland, Bouck, and Lee), Treasurer Melissa Fredrick (Michael Baker Corporation), Secretary Lee Ann Sinagoga (Tetra Tech NUS), Councilor 1 Thomas Biksey (Environmental Strategies Corporation), Councilor 2 Laurie Winslow (ThermoRetec), and Student Councilor Allison Robinson (University of Pittsburgh).

Recent Seminars

Mr. David C. Cannon, Jr., and Dr. James A. Barter of PPG Industries gave the presentation "The EPA Pollution Prevention Framework." PPG is one of the companies tapped by EPA to participate in its Pollution Prevention Framework (P2 Framework) initiative. The presenters discussed the P2 Framework that enables PPG to assess chemicals/products for the potential to cause environmental harm by evaluating chemical/physical properties, bioaccumulation, cancer-causing potential, or toxicity to aquatic organisms. The use of the EPA methodology allows PPG to assess chemicals early in product develop-

ment and before they reach EPA for final approval, thereby saving time and money.

Dr. Mitchell Small and Mr. Patrick Gurian of Carnegie Mellon University, Departments of Civil & Environmental Engineering/Engineering & Public Policy, discussed the arsenic drinking water standard at a presentation titled “Cost, Risk and Benefit Analysis for the New On-Again/Off-Again Arsenic Drinking Water Standard.” The history and motivation for the arsenic drinking water regulation was reviewed. Additionally, a statistical simulation model was presented that evaluated the cost and benefits of the proposed arsenic maximum contaminant levels. Estimated costs and arsenic exposure reductions for water suppliers were considered to estimate the national compliance cost, arsenic exposure reduction, and resulting cancer risk reduction. Comparisons with estimates from the EPA and water industry studies identified key points of controversy in the ongoing arsenic debate.

Ecological Risk Assessment Workshop Sponsored by Greater Pittsburgh Chapter

The Ecological Risk Assessment Workshop “How is it performed? What is it used for?” (presented by Tom Biksey, Environmental Strategies Corporation) was held Saturday, 28 July 2001, at the Frick Environmental Center in Pittsburgh, Pennsylvania.

Chicago Regional Chapter

Margaret MacDonell, President

SRA Cosponsors Successful International Environmental Conference



SRA Past Presidents Betty Anderson (far left) and Curtis Travis (far right) offer environmental insights during the international Masters Roundtable at *Eco-Inforna 2001*.

The Society for Risk Analysis (SRA) and the SRA Chicago Regional Chapter were among several cosponsors of an international conference cohosted by the U.S. Department of Energy Center for Risk Excellence (DOE CRE) and Argonne National Laboratory (ANL), which was held at ANL 14-18 May. *Eco-Inforna 2001* was the sixth in a series of interdisciplinary environmental meetings that began in Bayreuth under the organization of Dr. Otto Hutzinger (University of Bayreuth) and Drs. Leo Newland and Ken Morgan (Texas Christian University, [TCU]). “Environmental Risks and the Global Community: Strategies for Meeting the Challenges” was the theme of this year’s conference, organized by Dr. Alvin Young (CRE Director) with assistance from me as his program chair and Dr. Loren Habegger, who is also past (first) secretary-treasurer of the SRA Chicago Regional Chapter.

Over 230 scientists representing more than 25 countries participated in discussions on how new science and technology

can be applied to better understand and respond to our global environmental problems. In addition to DOE, ANL, TCU, and many other national laboratories and universities from both the United States and abroad, participating organizations included the U.S. Environmental Protection Agency (EPA), also a cosponsor, U.S. Department of Defense, North Atlantic Treaty Organization (NATO), United Nations Educational, Scientific, and Cultural Organization (UNESCO), World Health Organization (WHO), United Nations Environment Programme (UNEP), and the World Bank.

Eco-Inforna 2001 highlighted opportunities in four areas: sustainable environment, engineering and biotechnology, public policy and due process, and environmental information in the 21st century. Participants were asked to highlight recommendations and the outlook for the future within a variety of topics. Current risk issues addressed ranged from cleanup of Cold War legacy sites and the energy crisis to food safety, including bioengineering, organic foods, and mad-cow and foot-and-mouth diseases. Transboundary transport of persistent organic pollutants (POPs) and global climate change were also discussed, as were better ways to predict and manage impacts of urbanization on our environmental resources. Innovative approaches highlighted included tools such as information technology and Internet applications together with geographic information systems and remote sensing, as well as environmental partnerships and communication—as illustrated by recent international agreements for POPs.

Presentations by a number of SRA scientists and participation by many Chicago Regional Chapter members greatly enhanced the meeting. SRA Past President Dr. Yacov Haimes provided a stage-setting keynote address on the science and art of risk assessment and risk management, drawing from his wealth of experience in translating concepts to applications and illustrating how risk analysis can be effectively applied to evaluate and manage global environmental threats. In a plenary Masters Roundtable, six international experts—including Past Presidents Dr. Betty Anderson and Dr. Curtis Travis—shared insights gained in the environmental risk arena during the last few decades. Anderson described the power of risk assessment as a rigorous protocol for improving both our scientific knowledge and the quality of integrated information given to risk managers through an increasingly participatory process. Travis framed global environmental problems in the context of sustainability and emphasized the importance of recognizing interconnections among society, economy, and the environment and pursuing global consensus on world problems so we can target critical issues with resources and research.

SRA scientists also strengthened the technical sessions. To highlight approaches for dealing with various mixtures and cumulative risk issues were described by Dr. Charlie Menzie (Menzie-Cura), Drs. Ed Bender, Jim Rowe, and Rick Hertzberg (EPA), Drs. Jim McDougal and Peter Robinson (Wright-Patterson Air Force Base), Dr. Frank Hearl (National Institute for Occupational Safety and Health), and Dr. Moiz Mumtaz (Agency for Toxic Substances and Disease Registry). Other *Eco-Inforna 2001* speakers included Nobel Laureate Dr. Sherwood Rowland (University of California-Irvine), Dr. Ichtaque Rasool (Centre Nationale des Etudes Spatiales, France), Dr. Lars-Otto Reiersen (Executive Secretary, Arctic Monitoring and Assessment Program, Norway), Dr. Carolyn Huntoon (DOE Assistant Secretary for Environmental Man-

agement), and Paata Shevardnadze (UNESCO, Republic of Georgia).

Participants were complimentary of the high quality of presentations and the range of critical, interconnected environmental issues addressed, as well as the opportunities that were developed for new partnerships to solve our shared problems. The *Eco-Infirma 2001* program, including presentation abstracts, is available at <http://eco-informa.ead.anl.gov>; a summary report and proceedings will follow.

New England Chapter

The June Seminar of the New England Chapter of the Society for Risk Analysis (SRA-NE) featured speakers Abel Russ and Dale Hattis of Clark University.

Russ spoke on "Changes in Body Fat and Body Fat Variability With Age: Inputs to Future PBPK Modeling of Highly Fat-Soluble Chemicals in Childhood." Changes in body fat with age can be an important factor in determining the dilution volume for storage and likely rerelease of lipophilic toxicants during childhood. Since precise estimates of percent body fat are only obtainable with intensive methods such as underwater weighing, researchers have experimented with ways of calculating percent body fat from anthropometric measurements. Published reports of observed percent body fat gave us a rough idea of how the average value of this characteristic changes with age—an initial peak at about age 1, followed by a fall through age 5 or so, and then an "adiposity rebound," most pronounced in females, through puberty. Variability at any age was assessed by deriving body-fat equations based on body-

mass index and the sum of tricep and subscapular skinfold thicknesses, which are both reportedly good predictors, and applying them to the nationally representative NHANES3 dataset. We tentatively conclude that variability in percent body fat increases between mid-childhood and adulthood and that percent body fat exhibits a bimodal normal distribution from ages 5-7 through puberty.

Dale Hattis presented "Bad Facts Make Bad Law: Commentary on the DC Circuit's Chlorine Decision." The DC Circuit Court has recently ruled EPA's decision to set a zero aspirational guideline level for chloroform in drinking water to be "arbitrary and capricious" because EPA disregarded a technical advisory committee's conclusion that there was likely to be a "nonlinear" mode of action for chloroform carcinogenesis in some available animal cancer bioassays. In doing this the court incorporated strong language to the effect that the technical advisory committee's work constituted the best available evidence for EPA rulemaking, and that the "nonlinear" category implied a population threshold for chloroform carcinogenicity. I believe there is good reason to be critical of the technical analysis in this case and the implicit use of a "more likely than not" evidentiary criterion in discarding a plausible low-dose linear genetic component for chloroform carcinogenesis as well as carcinogenesis by other chemicals with reactive metabolites. On the other hand, EPA should clearly have gone to much greater lengths to justify its apparent disregard of the technical panel's conclusions. Adaptations seem to be needed to EPA's currently proposed guidance to its technical panels for evaluating and classifying mode-of-action information for carcinogens. <<>>



Advertisements

Short Course on Risk Assessment and Management

The Center for Risk Management of Engineering Systems of the University of Virginia presents a four-day short course on Risk Assessment and Management on 15-18 October 2001 in Charlottesville, Virginia. Instructors are Yacov Y. Haimes and Stan Kaplan.

The \$850 registration fee (\$750 for members of the Society for Risk Analysis and \$425 for qualifying students) includes one copy of the book *Risk Modeling, Assessment, and Management* by Y.Y. Haimes, Wiley & Sons, New York, 1998; *An Introduction to TRIZ and New Tools for Failure and Risk Analysis* by Stan Kaplan, Ideation Int'l, San Pedro, CA; and notes.

For more information, contact Dr. Yacov Y. Haimes, Center for Risk Management of Engineering Systems, P.O. Box 400736, 112 Olsson Hall, Charlottesville, VA 22904; phone: 434-924-0960; email: haimes@virginia.edu.

RISK newsletter and SRA Web Site Advertising Policy

Books, software, courses, and events may be advertised in the Society for Risk Analysis (SRA) RISK newsletter or on the SRA Web site at a cost of \$250 for up to 150 words. There is a charge of \$100 for each additional 50 words.

Ads may be placed both in the RISK newsletter and on the Web site for \$375 for 150 words and \$100 for each additional 50 words.

Employment opportunity ads (up to 200 words) are placed free of charge in the RISK newsletter and on the SRA Web site. Members of SRA may place, at no charge, an advertisement seeking employment for themselves as a benefit of SRA membership.

Camera-ready ads for the RISK newsletter are accepted at a cost of \$250 for a 3.25-inch-wide by 3-inch-high box. The height of a camera-ready ad may be increased beyond 3 inches at a cost of \$100 per inch.

The RISK newsletter is published four times a year. Submit advertisements to the Managing Editor, with billing instructions, by 15 January for the First Quarter issue (published mid-February), 15 April for the Second Quarter issue (mid-May), 15 July for the Third Quarter issue (mid-August), and 15 October for the Fourth Quarter issue (mid-November). Send to Mary Walchuk, Managing Editor, RISK newsletter, 115 Westwood Dr., Mankato, MN 56001; phone: 507-625-6142; fax: 507-625-1792; email: mwalchuk@hickorytech.net.

To place an employment ad on the Web site, fill out the online submittal form at www.sra.org/opptys.htm. To place other ads on the Web site contact the SRA Webmaster at webmaster@sra.org. Ads placed on the Web site will usually appear several days after receipt. For additional information see the Web site at www.sra.org/policy.htm#events.



Advertisements

Post-Doctoral Position: Developing State-of-the-Art Human Health Assessments

The U.S. Environmental Protection Agency's (EPA) National Center for Environmental Assessment (NCEA), Office of Research and Development, is seeking candidates for a federal, three-year postdoctoral research position (GS 11/12) with the Integrated Risk Information System (IRIS) Program located in Washington, D.C.

IRIS is an Agency-wide consensus health information program administered by NCEA.

This postdoctoral position involves the critical, in-depth review and analysis of toxicological and epidemiological data in support of the qualitative and quantitative assessment of health effects associated with exposure to chemical substances, preparation of health assessment documents that reflect current scientific principles and risk assessment methodologies, selection of approaches to use in developing quantitative health assessments, and application of complex models.

The position may involve work on crosscutting health assessment issues, on the development of scientific approaches and guidance for the IRIS program, and on the improvement of risk assessment methodologies and their implementation.

Applicants who have earned a doctoral degree within the last five years in toxicology, epidemiology, public health, or related degrees in the health sciences are encouraged to apply.

For further information, please contact Susan Rieth at 202-564-1532 or rieth.susan@epa.gov.

EPA is an equal opportunity employer.

AAAS Risk Policy Opportunities in Washington, DC, 2002:03

The American Association for the Advancement of Science (AAAS) invites scientists and engineers to apply for one-year risk policy fellowships, beginning in September 2002. Qualified Fellows serve in the U.S. Department of Agriculture or the U.S. Food and Drug Administration, applying scientific and technical input on issues relating to human health, environmental, and economic aspects of risk assessment and risk management.

The AAAS Risk Policy Fellows Program has been designed to provide each Fellow with a unique public policy learning experience and to bring technical backgrounds and external perspectives to decision-making in the U.S. government.

Applicants must have a Ph.D. in any physical, biological, or social science or an equivalent doctoral-level degree by the application deadline (**January 10, 2002**). Candidates must also be U.S. citizens; demonstrate exceptional competence in some area of science or engineering; and have an interest in applying their expertise to the economic and technical assessment of problems relating to human health or the environment. Underrepresented minorities and persons with disabilities are encouraged to apply.

Phone 202/326-6700 Web www.fellowships.aaas.org
E-mail science_policy@aaas.org



Canada Research Chair in Environmental and Health Risk Assessment

The Department of Statistics at the University of British Columbia (UBC) is seeking a candidate to nominate for a Junior (Tier II) or tenured Senior (Tier I) Canada Research Chair focused in environmental and health risk assessment. That nomination would be made under the Canada Research Chairs Program (www.chairs.gc.ca) established by the Government of Canada to promote research excellence in Canadian universities. To participate in that program, the University of British Columbia has developed a Strategic Research Plan that emphasizes certain thematic research clusters. The advertised Chair would be in the cluster on "Sustainability and the Environment."

The research of candidates for the Chair would need to have a focus in environmental science and concern the risks of environmental hazards. They would be involved in developing innovative statistical and computational tools for assessing those risks and their impacts.

Nominees for a Tier II Chair can be relatively new researchers but must have demonstrated exceptional promise and have the potential to become world leaders in the field. Those for Tier I Chairs need to be outstanding researchers with innovative research accomplishments and major impacts on the field. They must be internationally recognized leaders and have a superior record in attracting and supervising graduate students as well as postdoctoral fellows.

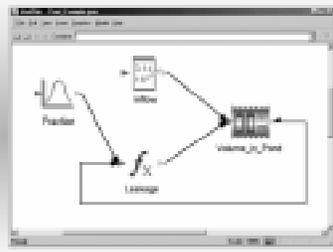
To be considered for nomination, candidates should send the names and addresses of at least three individuals at "arms length" to serve as references, along with a current curriculum vitae and a statement of research interests by 1 September 2001 to the Committee on Appointments, Department of Statistics, 333-6356 Agricultural Road, University of British Columbia, Vancouver, British Columbia, CANADA, V6T 1Z2. The start date would be negotiable but is nominally 1 July 2002.

UBC hires on the basis of merit and is committed to employment equity. All qualified persons are encouraged to apply.



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Genevieve S. Roessler, *Editor*, gnrsslr@frontiernet.net
 Mary A. Walchuk, *Managing Editor*, mwalchuk@hickorytech.net
 Sharon R. Hebl, *Editorial Associate*
 Gail Charnley, *Associate Editor*, healthrisk@aol.com
 David Clarke, *Contributing Editor*,
 david_clarke@americanchemistry.com

Society Officers:

John Ahearne, *President*, 2001, ahearne@sigmaxi.org
 Robin Cantor, *President-elect*, 2001, robin_cantor@lecg.com
 Tim McDaniels, *Secretary*, 2001, timmcd@interchange.ubc.ca
 Richard B. Belzer, *Treasurer*, 2002, regcheck@mail.com
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 roger.kasperson@sei.se

Members of SRA Council:

Michael Greenberg, 2002, mrg@rci.rutgers.edu
 Charles N. Haas, 2003, haas@drexel.edu
 F. Owen Hoffman, 2001, senesensor@senes.com
 Steven Lewis, 2003, sclewis@erenj.com
 Paul A. Locke, 2001, plocke@tfah.org
 Mitchell Small, 2002, ms35@andrew.cmu.edu
 John Vandenberg, 2002, vandenberg.john@epa.gov
 Peter M. Wiedemann, 2003, p.wiedemann@fz-juelich.de
 Lauren Zeise, 2001, lzeise@oehha.ca.gov

Secretariat: Richard J. Burk Jr., Executive Secretary, Society for Risk Analysis, 1313 Dolley Madison Blvd., Suite 402, McLean, VA 22102; phone: 703-790-1745; fax: 703-790-2672; e-mail: SRA@BurkInc.com

Publications Chair: Roger E. Kasperson, 46 8 412 14 04, fax: 46 8 723 03 48, roger.kasperson@sei.se

Newsletter Contributions: Send to Mary Walchuk, Managing Editor, RISK newsletter, 115 Westwood Dr., Mankato, MN 56001; phone: 507-625-6142; fax: 507-625-1792; e-mail: mwalchuk@hickorytech.net

Address Changes: Send to SRA@burkinc.com

Membership Directory on the Web?

The Society for Risk Analysis (SRA) Council has raised the question of whether the Membership Directory should be on the SRA Web site instead of being mailed to members. Please send your opinion to Mary Walchuk, RISK newsletter Managing Editor, 115 Westwood Dr., Mankato, MN 56001; fax: 507-625-1792; email: mwalchuk@hickorytech.net.

The Council is also still looking for membership input on whether the RISK newsletter should be converted to an electronic format, with members receiving an email notice of when the latest issue will appear on the SRA Web site. Should we go to an electronic-only RISK newsletter? If you have an opinion on the subject, please contact Mary Walchuk (contact information above) and let us know what you think.

The membership now has a choice: Paper or Electronic. Please let the Secretariat know if you would prefer to receive your RISK newsletter only on the Internet (contact Brett Burk, BBurk@BurkInc.com) and your name will be removed from the snail mailing list. If you would like to continue receiving a paper copy of the newsletter, do nothing and your name will remain on the snail mailing list. For now, all members will receive a notice of when the latest issue is on the Internet. <>>

Deadline for RISK newsletter Submissions

Information to be included in the **Fourth Quarter 2001** SRA RISK newsletter, to be mailed mid-November, should be sent to Mary Walchuk, RISK newsletter Managing Editor (115 Westwood Dr., Mankato, MN 56001; phone: 507-625-6142; fax: 507-625-1792; email: mwalchuk@hickorytech.net) no later than **5 October**.

Society for Risk Analysis Web Site
www.sra.org

SOCIETY FOR RISK ANALYSIS
1313 Dolley Madison Blvd., Suite 402
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