



The Internationalization of the Society for Risk Analysis Russian Chapter Joins Growing International Representation

“The Society set out, from its inception, to be an international society,” said Paul Deisler and Dick Schwing in their history of the Society for Risk Analysis (SRA).* “The founders were well aware that while risk is universal, types of risk, perceptions of risk, and the acceptability of different types of risk management might differ from one culture to another. This latter point argues for, rather than against, internationality: a major point of the Society is the enrichment and progress that would be made possible through cross-fertilization.”

Since its beginnings in the early 1980s, SRA has promoted dialogue in risk analysis all over the world. Starting as an organization in the United States, the SRA has grown to include sections and chapters in Europe, Japan, Kiev, Canada, Russia, Australia, and London and continues to foster and encourage this growth worldwide.

One of the most recent international additions to SRA is the Russian chapter, which was formally approved in December 2004. SRA-Russia has about 1,000 members and is led by President Michail Faleev and Vice President Valery Akimov.

SRA Past President Warner North has worked with the Russians from the beginning and has, according to current SRA President Baruch Fischhoff, “done heroic work to get that chapter going.” North gives SRA members a look at the formation of SRA-Russia and encouragement to continue the internationalization of the Society.

What led up to the formation of the Russian Chapter and what was the process involved?

North: Several groups of Russians contacted SRA at the time when I served as SRA president, 1991-92. In response I extended a trip to Europe to include visits to Moscow, and to Kiev and Kharkov in the Ukraine. In Moscow it became clear that I was dealing with several different academic institutes that each wanted to form a relation with SRA. It was competitive, and where we held the meeting of interested parties was an issue. Through a Stanford friend living

in Moscow I was able to arrange to use a conference room at the Institute of Systems Studies (VNIISI), which was not one of the institutes that had contacted SRA. I began by saying that it was my meeting, at a place I had arranged, and that I hoped that all of the interested individuals and groups would cooperate in forming a chapter that could apply for affiliation with the Society for Risk Analysis. I explained that the membership had to be open to anyone who wished to join and that the officers must be elected by the membership through regularly scheduled elections. In other words, the SRA-Russia chapter could not be formally linked to any one Russian scientific institution. In the aftermath of this meeting, nothing happened, as the various groups did not get together and agree on how to proceed with a chapter application. The group in Kiev did form an SRA chapter, with energetic leader-

(Internationalization, continued on page 6)

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President's Message

Risk Analysis—By the People

About 25 years ago, I had the opportunity to spend an afternoon with Stephen Cotgrove, at the University of Bath (UK), an early student of conflict over environmental protection. One of his comments that particularly struck me was, “The hardest thing for me to do is to convince engineers that they have emotions.”

In Cotgrove's view, as I understood it, this denial had two important consequences. One made him less sympathetic to engineers, the other more. The former was that seeing themselves as relying entirely on reason made it too easy for engineers to dismiss their critics as being driven by emotion. We all have our favored ad hominem arguments. “Hysterical public” is a convenient, ego-enhancing one, when citizens object to an engineered system. However, it is not a helpful diagnosis unless supported by evidence.

Recently, I was invited to address a largely technical group about integrating risk analysis and risk communication in the context of terrorism. The ensuing discussion was lively and constructive until someone began a question with “As I understand it, the accepted wisdom is that if an attack occurs, the public will panic . . .”

I had devoted one slide to that exact topic and it had said exactly the opposite. I made two snap decisions. One was that the questioner was not disputing my claim. He simply had not heard it, because it so contradicted his expectations. (Psychologists use “selective perception” to describe such processes.)

The second snap decision was that I did not want to be invited back. So, I replied somewhat undiplomatically, saying that although psychologists have made a living documenting the foibles of lay judgments, few compared to this fable about lay people, which was so widely held in the expert community.

Looking at natural disasters, wartime experiences, and other collectively stressful events, scientists have found that panic is rare, and pro-social, even brave, behavior the norm. Indeed, ordinary citizens provide much of the first response to such events. As a result, this misconception typically has relatively small practical consequences. Citizens have already done their work before the professionals arrive to do theirs. We may not be so lucky, if our society is put on a permanent wartime footing due to anxiety over terrorism. In that case, the image of an incompetent public, partially fed by the myth of panic, could foster a militarization of the home front that invests protective resources inefficiently, while undermining civic society.

The persistence of the panic myth brings to mind Cotgrove's second claim—the one regarding how engineers' denial of emotion increased his sympathy toward them. Engineers often bear enormous responsibility for

solving intellectually challenging problems protecting life, limb, and economic well-being, under socially chaotic circumstances, producing wildly conflicting pressures. Small wonder, if they felt some emotion.

Over the past 20 years, researchers have learned a lot about the effects of specific emotions on specific judgments. For example, anger, unlike other negative emotions, makes people more optimistic. It also encourages seeing other people as responsible for problems rather than blaming the circumstances in which those people find themselves. By contrast, sadness increases the attribution of problems to general circumstances, which seem less readily addressed than troublesome people.

Thus, anger might help people to get some things done if it does not cloud their judgment in ways that keep them from doing things right. Sadness, on the other hand, might evoke the compassion needed to remember just how complicated circumstances can be, while evoking sympathy (or at least empathy) for those trying to solve them.

In such ways, emotion can serve a mobilizing function. Those who deny their emotions deny the legitimacy of needing help to stay the course. Cotgrove's book, *Catastrophe or Cornucopia: The Environment, Politics and the Future*, contrasts two competing visions of the future of the natural world. Like most views on topics of any importance, these have both cognitive and emotional elements. (Dual process theories in psychology treat how these interact, along the interplay of people's detailed beliefs and their general orientation to a problem.)

Each side in a risk conflict has its engineers. Although they may be responsible for the cognitive part of the operation (leaving the emotions to the liberal arts grads), doing their job well requires a passion for it. Emotions often include a general level of arousal, whose interpretation depends on situational cues (providing an answer to “why do I feel this way?”).

A common source of situational cues is confrontation with critics. It naturally triggers anger focused on the source of the criticism, rather than on the circumstances producing it—others doing their job passionately. Recognizing these processes might help people to get the best out of their emotions. So might recognition of how difficult it is to insulate judgments from conflicts of interest. Analysis might benefit from a battle of emotions, as well as the usual battle of the wits.



Baruch Fischhoff
Pittsburgh, PA, 11 June 2005



What Do We Do?

— a quarterly look at the incredibly diverse field of risk analysis —

H. Keith Florig

What is your job title?

Florig: I'm a Senior Research Engineer in the Department of Engineering and Public Policy at Carnegie Mellon University. The title is a bit misleading though, given that I do very little of what most people would recognize as engineering.



How is risk analysis a part of your job?

Florig: I do research on public policy issues involving health, safety, environmental, and security risks. One common theme of my work is assessing risk-management alternatives under conditions of uncertain and indirect costs and benefits. Another is incorporating public preferences into the risk-management process. I see risk analysis as a very interdisciplinary activity, requiring an integration of natural and social science concepts and methods. In one current project, for instance, my colleagues and I are looking at how official risk communication messages for radiological emergencies should be designed and evaluated. That requires consideration of the science of radiation dispersion, exposure, and health effects; an understanding of peoples' goals and information needs under stressful conditions; and attention to news media and organizational behavior. In another recent project, I examined public preferences for various interventions that the US Postal Service might apply to reduce the risk of malicious use of the mail to cause injury. This project attempts to weigh the risk-reduction benefits of measures such as mail irradiation or elimination of drop boxes against the cost to mail users. Those costs can include increased postage, inconvenience, damage to mail contents, mail delay, and loss of privacy.

How did you decide to pursue this career?

Florig: When I was studying for my master's degree in nuclear engineering in the late 1970s, I worked part-time for Westinghouse Electric Corp.'s Campus America Program, a strategic communications operation designed to "bring the truth about nuclear power to the public." In that job, I observed how technology assessment is chock full of value judgment at many levels and how advocate organizations are vulnerable to group think and subconscious bias. This job piqued my interest in the role of risky technologies in society and how society chooses which risky technologies to deploy. I subsequently enrolled in the PhD program in engineering and public policy at Carnegie Mellon, where I began research with Granger Morgan, Indira Nair, and others on the emerging policy problems posed by epidemiologic studies suggesting a link between power lines and cancer.

What got you to where you are in the field of risk analysis today?

Florig: I've had some fantastic mentors in Granger Morgan, Baruch Fischhoff, and Claude Poncelet. I also had the good fortune to have started work on risk problems at an early enough stage of the "issue cycle" to benefit from sustained funding.

What is the most interesting/exciting part of your job?

Florig: I work with an extraordinarily diverse and talented bunch of people. The best part of my job is the enlightenment that I get from collaborating with people with such great substantive knowledge and active imaginations. I like the sense of command that comes from subjecting risk-related policy problems to high-power scrutiny by experts in fields as diverse as engineering, economics, psychology, and political science.

What would you recommend to those entering the field of risk analysis interested in a job like yours?

Florig: Because risk analysis is not a traditional academic discipline, there are very few academic jobs in risk analysis per se. Most academics who conduct risk-related research have built credentials in traditional areas such as engineering, public health, toxicology, or communications. So my advice to graduate students would be to choose your risk-analytic research carefully to be sure that your work will be valued by the traditional department in which you land your first academic job. I also note that risk analysis is a fluid discipline in which both methods and application domains are constantly changing. It is useful to track these trends and to focus on emerging theory and applications where funding opportunities are most likely to blossom.

How has membership/involvement in the Society for Risk Analysis (SRA) helped you in your work?

Florig: The very existence of SRA adds legitimacy to the entire field of risk analysis and to the work of all those who call themselves risk analysts. SRA is the mother node of the risk analysis community, facilitating interpersonal and interorganizational linkages that would not have otherwise materialized. Publishing in the Society's journal, *Risk Analysis*, is a valuable credential recognized by the entire SRA membership.

Is there anything else you would like to add?

Florig: I hope that SRA will continue to evolve more integrative approaches to addressing risk-related problems. Addressing the nonmonetary costs of risk management interventions (for example, privacy invasion for homeland security) seems to be a particularly thorny challenge that is central to many risk policy decisions, yet has received scant attention from the risk-analytic community.

I would like to thank the newsletter for inviting my input and I would like to express my appreciation to the legions of our profession who have served SRA over the years to keep it vibrant. SRA is a very cool organization.





SRA 2005 Annual Meeting

2005 Society for Risk Analysis Annual Meeting 4-7 December—Orlando, Florida

H. Christopher Frey, SRA President-elect

The Annual Meeting of the Society for Risk Analysis (SRA) will be held 4-7 December 2005 in Orlando, Florida. The meeting will include a series of workshops and a three-day technical program that includes hundreds of individual presentations, two plenary sessions, and several roundtable discussions. In addition, a great way to get involved in SRA is to attend the annual meeting of the specialty group(s) of greatest interest to you while you are at the annual meeting.

There are several workshops planned for Sunday, 4 December, that cover a variety of methodological issues, ranging from techniques to quantifying or prioritizing probabilistic or other types of uncertain information to methods for benchmark dose modeling, risk assessment of chemical mixtures, and risk communication. (See page 5.)

As I have mentioned in previous articles, I have three main goals for this year's meeting: (1) to take advantage of our meeting location to touch upon many "local" topics that have broad implications or analogies, (2) to continue the internationalization of the Society, and (3) to encourage a more interdisciplinary orientation in the technical program. The technical program includes several topics that address local issues, such as the Florida ecosystem. There are numerous sessions that deal with global developments in specific methods or application areas. Furthermore, there is an increased presence of sessions that are interdisciplinary, as described below.

The annual meeting will include two plenary sessions that deal with the overall meeting theme of "25th Anniversary of SRA: Past, Present, and Future of Risk Analysis." The first plenary session, scheduled for Monday morning, 5 December, will include a historical overview of the Society for Risk Analysis that traces its growth since its inception in 1981, providing insights into advancements and challenges. In addition, the perspectives of those both inside and outside SRA will be brought to bear on the current directions and future prospects of risk analysis. The second plenary session will be on Wednesday, 7 December. This year marks the 25th anniversary of the "Benzene Case" in which the US Supreme Court, in its ruling on *Industrial Union Department, AFL-CIO vs. American Petroleum*, famously stated that "some risks are plainly acceptable and others are plainly unacceptable." The plenary session will address how the basic framework for risk analysis has evolved in the United States and abroad since the Benzene Case. Furthermore, benzene is itself an interesting case study regarding the interdisciplinary aspects of risk analysis, which will be highlighted during the session.

The main program of the annual meeting will include over 90 technical sessions. The program was put together by the Program Committee, cochaired by Gail Charnley and Steve Lewis, which met in Alexandria, Virginia, on 22 June. The committee was comprised of a large group of SRA members who donated their time to review and organize the program.

The topics covered in the main program include engineering, exposure, dose response, economics, decision analysis, ecological risk assessment, food and water, biological stressors,

risk communication, law, and others. Selected examples of session topics are Past, Present, and Future of Risk Communication; 25 Years of Food Safety Risk Analysis: Has Our Food Gotten Safer?; Risk Assessment for Biological Stressors: Past, Present, and Future; Evidence-Based Decision Making in Europe and the U.S.; Global Applications of Ecological Risk Assessment; Analytical Tools for Engineering Systems; Risk Science and Law; Environmental Security in Harbors and Coastal Areas; Children's Health and Regulation; and others.

The meeting will cover recent developments in component areas of risk analysis methodology. For example, there will be two symposia sessions that deliver the main report and recommendations of the Society for Toxicology's July 2005 workshop on probabilistic risk assessment. Furthermore, there will be disciplinary methodological sessions on topics such as multicriteria decision analysis, factors influencing risk perception, strategies for modeling systems biology, computational methods, software, probabilistic modeling, chemical mixtures, biomonitoring, international approaches to risk management, comparative risk and innovative use of risk assessment, integrating science and risk analysis into public policy, mode of action and cancer guidelines, and improving dose-response estimates.

Furthermore, the meeting will provide coverage of case study applications of risk analysis to a wide variety of problem areas. These areas include terrorism, ecological risk, engineering systems and infrastructure, human health risks associated with a variety of specific chemicals or chemical mixtures, introduced species, food-borne pathogens, inhalation exposure, nanotechnology, soil gas and vapor intrusion, indoor air quality, outdoor air quality, homeland security, landscape and watershed-scale decision analysis, and others.

Something new that we are doing this year is to have an explicit set of "interdisciplinary" sessions. Examples of these are sessions on indoor air quality, outdoor air quality, terrorism, and others that draw upon papers from various specialty groups. For example, such a session might include papers that deal with engineering, exposure, dose response, and risk communication on a closely related topic. These sessions are intended to promote cross-disciplinary interactions among the specialty groups.


At lunch time on Wednesday, 7 December, there will be roundtable sessions that will offer opportunities for interactive discussions on a wide variety of issues, ranging from planning for future annual meetings to internationalization of SRA, as well as developments in topical areas in risk analysis.

I hope you will agree that this year's technical program has a nice balance of "big picture" sessions as well as those that deal with specific methodologies and case studies, ranging from those with narrow disciplinary interests to those that are broadly interdisciplinary. Please keep in mind that my summary here is necessarily incomplete given space limitations. Please keep an eye out for the release of the preliminary and final programs as we get closer to the annual meeting. In the meantime, please make your travel plans to join us in Orlando!



Continuing Education Program Workshops

The continuing education program for the annual meeting in Orlando this December will include the following half- and full-day workshops. Consult the Society for Risk Analysis Web site at <http://www.sra.org/events.php> or the preliminary program mailed to members for descriptions of the workshops. (Contacts from whom further information can be obtained are given in parentheses.)

- Recommended Practice Regarding Selection, Application and Interpretation of Sensitivity Analysis Methods Applied to Exposure or Risk Assessment Models; FULL DAY; <http://www.ce.ncsu.edu/risk/workshop05/>; \$295 (Amirhossein Mokhtari, amirh357@yahoo.com)
- Replacing Default Values for Uncertainty Factors with Chemical Specific Adjustment Factors: Reducing Uncertainty in Noncancer Risk Assessment; HALF DAY; www.tera.org/education/SRA_CSAAF2005.htm; \$175 (Lynne Haber, Haber@tera.org)
- Intermediate Topics on Health Risk Assessment of Chemical Mixtures; HALF DAY; \$249 (Linda K. Teuschler, teuschler.linda@epa.gov)
- Benchmark Dose Modeling and Its Use in Risk Assessment; FULL DAY; www.tera.org/education/srabmd2005.htm; \$249 (Jay Zhao, zhao@tera.org)
- Beyond Monte Carlo: An Introduction to Imprecise Probabilities; FULL DAY; <http://www.ramas.com/iporlando.htm>; \$175 (Scott Ferson, scott@ramas.com)
- Beyond Point Estimates: Risk Assessment Using Interval and Possibilistic Arithmetic; HALF DAY; <http://www.ramas.com/interval.htm>; \$175 (Arlin Cooper, acooper@sandia.gov)
- Incorporating “Omic” Information into Risk Assessment and Policy; HALF DAY; http://depts.washington.edu/irarc/SRA_genomics_seminar.html; \$250 (Elaine Faustman, faustman@u.washington.edu)
- Integrated Risk Communication and Decision Analysis: Process, Methods and Tools; FULL DAY; \$350 (Igor Linkov, linkov@cambridgeenvironmental.com)
- A Primer for the Risk Assessment Reviewer: Reading Between the Lines of an Environmental Health Risk Assessment; FULL DAY; (Brandolyn Thran, brandolyn.thran@us.army.mil) 



Member News

Pertti (Bert) Hakkinen, Michael Kamrin, Betty Locey

Pertti (Bert) Hakkinen, Michael Kamrin, and Betty Locey are among the associate editors of the second edition of the *Encyclopedia of Toxicology*. This comprehensive survey of toxicology continues to present entries devoted to key concepts and specific chemicals. There has been an increase in entries devoted to international organizations and well-known toxic-related incidents such as Love Canal and Chernobyl. Along with the traditional scientifically based entries, new articles focus on the societal implications of toxicological knowledge including environmental crimes, chemical and biological warfare in ancient times, and a history of the US environmental movement. *Encyclopedia of Toxicology* is available at www.books.elsevier.com/etox.

Allen Brodsky

Dr. Allen Brodsky and his selected team have produced a book of timely interest to the Society: *Public Protection from Nuclear, Chemical, and Biological Terrorism*, coedited with Raymond H. Johnson, Jr., and Ronald E. Goans, MD, Medical Physics Publishing, Madison, Wisconsin, 2004. This 832-page book was provided for a four-day summer school of the Health Physics Society in July 2004. More than 40 experts contributed chapters, appendices, or material for the book, which provides comprehensive information for emergency planning, methodology and slides for professional and responder training, data and methods for rapid dose and risk assessment in the aftermath of an attack, and risk and protective measure communication with the public and the media. Two chapters from the book can be downloaded free from www.medicalphysics.org: Chapter 25 “Hospital Responses to Radiation Casualties” and Chapter 20 “Experiences with Early Emergency Response and Rules of Thumb.” The latter chapter, authored by Dr. Brodsky and Professor Niel Wald, MD, describes dose assessments and les-


sons learned from radiation accident cases managed in the 1960s at the University of Pittsburgh.

Another book of interest by Dr. Brodsky that is still in print is *Review of Radiation Risks and Uranium Toxicity*, RSA Publications, Hebron, Connecticut, 1996. This book summarizes epidemiological and experimental data used by expert bodies in developing standards for radiation and uranium protection up to the date of publication.

Ragnar Löfstedt

Understanding how to communicate risk in our modern society seems to be becoming more and more complex. Recent scandals in several European countries from BSE to dioxin in chicken feed have made the public skeptical of government and of business interests. Faced with this, The Centre hosted the launch of Professor Ragnar Löfstedt’s new book on how to communicate in these new post-trust societies, *Risk Communication in Post-Trust Societies*. This book launch was part of The Centre’s wider series of debates on risk and communication.

The event was attended by a range of government officials, media representatives, communication professionals, and business professionals. The focus was on discussion. Löfstedt set the scene, highlighting some of the key findings from his book, namely the key relationship between trust in an organization and the concern that the public will have in the organization handling risk. This was followed by initial comments by both Geoffrey Podger (director of the European Food Safety Agency) and Caroline Jackson, (Member of the European Parliament, former chair of the European Parliament’s Environment Committee).

These initial views were followed by a lively debate that covered a number of topical risk issues, such as phthalates in toys and flame retardants, where the issues of both trust and balancing risks were discussed. In addition, there was also more general discussion of how to communicate risk in these new post-trust societies, with one of the strong messages being the importance of pro-activity in any risk-communication strategy. 

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ship from Naum Borodyanskiy. In Kharkov there was a concerted effort, which came in large part as a result of a prior outreach by Vlasta Molak (SRA secretary and special liaison for section development in developing countries) from her involvement in the “sister cities” relation between Cincinnati and Kharkov. As in Moscow, forming a chapter did not occur, because different groups did not resolve their disagreements.

Starting with the 1992 Annual Meeting in San Diego, SRA began inviting interested scientists from the former Soviet Union to participate and gave them travel grants so that they could attend our annual meeting and present papers. There were four in 1992, including Naum Borodyanskiy, Vitaly Eremenko, and two other nuclear engineers from Moscow. In subsequent years other Russians and eastern Europeans attended SRA annual meetings. I drew up a list from SRA directories and found that there were over 50 Russians who either attended meetings or joined the Society for the five years 1998-2002. Sergey Kharchenko was a member in all five of these years. He, Nikolay Tikhomirov, and Edouard Tchernakov visited me at Stanford after one annual meeting and subsequently arranged for me to lecture in 2001 on risk analysis for several weeks at the Plekhanov Russian Academy of Economics in Moscow, where Dr. Tikhomirov now serves as dean.

In 2003 there were new overtures from several separate groups of Russians interested in affiliating with SRA. Some we knew as annual meeting attendees and SRA members, and some were not known to me or to others in the SRA leadership. When I was in Moscow in April 2003, I asked Sergey Kharchenko to help me in organizing another meeting, this time at the small Stanford-in-Moscow campus. Several of the people I had not previously met came to this meeting. We had a useful discussion getting to know each other, but no clear plan emerged to proceed with forming a Russian affiliate of SRA.

Valery Akimov and Valery Lesnykh came to the World Congress and several annual meetings, and they took a lead in forming the new chapter, with substantial support from their organization, the Russian Ministry for Emergencies, EMERCOM. In the fall of 2003 the current SRA president, Bernard Goldstein, and I visited Moscow and had extensive discussions with Akimov and Lesnykh and their colleagues. We were persuaded that they and their management at EMERCOM understood that the Russian Society for Risk Analysis affiliated with SRA must be open to all interested in membership and that governance must be through officers selected by the membership through regularly scheduled

elections. We encouraged them to submit a formal application. That application for affiliation was approved by the SRA Council in December 2004. To everyone’s disappointment, Drs. Akimov and Lesnykh were not able to come to the 2004 SRA Annual Meeting in Palm Springs. It was my pleasure to attend the meeting of the Russian Society for Risk Analysis in Moscow in April 2005, to present a paper there, to listen to approximately 50 other papers in a three-day meeting attended by about 300 people, and to be honored by being made Honorary Member #1 of the SRA-Russia Chapter.



With Valery Lesnykh (right) in Moscow, Warner North holds the card naming him Honorary Member #1 of SRA-Russia.

What was the benefit to the Russians in having a chapter rather than just being members of the SRA?

North: I think the benefit for the Russians in having a chapter is that they have their own organization that can sponsor and manage activities such as professional meetings and a journal in their language. The Russian risk analysis journal, *Issues of*

Risk Analysis, is up and running as an official publication of the Russian Scientific Society for Risk Analysis, consistent with its declared goals and objectives, in particular to promote generalization of risk analysis findings, development of knowledge and data bases, a risk-related informational environment, monitoring and support of scientific programmes, development and introduction of educational standards and programmes, coordination of professional activities, development of standard measures of acceptable risk, legislative and legal framework, as well as other goals and objectives stated in detail in the SRA-Russia Charter. I have promised to submit my presentation at the April SRA-Russia meeting both in English and, with the help of friends from the Stanford Russian Department, in Russian. Members of SRA who are interested in the SRA-Russia journal should contact its editor, Andrey Bykov (csi2@mchs.gov.ru).

Do you have any advice for others thinking of forming a chapter?

North: I was not involved in forming the Northern California Chapter, but I served as its first president. So I have domestic as well as international experience, and both sets of experience agree. There is a great deal of work needed to organize mailing lists, meetings, and speakers who will attract potential members to come to meetings. I think the key to successful formation of a chapter is hard work by a small group of people who are very committed to the formation of a local chapter. With success in building membership that will participate in chapter activities, it becomes much easier for successors to the initial group to continue these activities.

What is the role of risk analysis in Russia? In what ways is risk analysis being used?

North: Much of the interest of the Russians who have joined SRA-Russia is in the risk management of natural disasters— earthquakes, floods, and fires. EMERCOM is strongly encouraging more use of quantitative risk methods, just as the United States Environmental Protection Agency in the 1970s and 1980s was strongly encouraging quantitative methods for risk assessment and management of toxic agents in the environment. In these and similar situations, a professional society can provide a place for dialogue among representatives of national government, regional and local government, private corporations, academic scientists, and concerned citizens. We in the United States, Europe, and Japan have learned a lot from dialogue among our members from the social sciences, the engineering and physical sciences, and biological sciences such as toxicology and ecology. I expect that a similar process will take place in Russia. It is a huge country, and the sparseness of infrastructure over great distances and the challenges of its climate make natural disasters an excellent leading issue for SRA-Russia. The papers I heard in April addressed a variety of other issues

as well, many of which seemed very familiar from my experience in other countries.

Is there anything else you would like to add about the Russian chapter or risk analysis in Russia?

North: Russia has an outstanding history of accomplishment in science and engineering. The academic system of the Russians is extremely sophisticated in the use of quantitative methods. But their experience is limited compared to western societies in the give-and-take of making collective decisions.

I think there is much we can learn from them, and there are many areas where we can help them learn from us. I am pleased and proud to have a number of Russians as colleagues and friends. I have enjoyed my visits to Moscow, St. Petersburg, and many of Russia's historic sites. I was pleased to learn that the current SRA president-elect, Chris Frey, visited Moscow in July. I encourage others in SRA to take advantage of our international structure and to learn more about what is being done in risk analysis in Russia and, more generally, outside your own country or region. We have much we can gain from each other.

A Quick Look at International Chapters and Sections of SRA

SRA-Japan

In 1983 SRA members from the United States visited Tsukuba, Japan, and held a joint workshop with Japanese researchers. This led to the formation in 1988 of the Society for Risk Analysis-Japan through the efforts of the first officers of the section, who were scientists and experts working in the environmental sciences, public health, safety engineering, social psychology, statistics, jurists, etc.

SRA-J started with the support of the SRA in the United States but is now run independently, with totally independent budgets. SRA-J publishes the *Japanese Journal of Risk Research* and publishes the *Journal of Risk Research* in cooperation with SRA-E.

“There is no other academic society which deals with principles and methods of risk analysis as research targets,” said General Secretary Shoji Tsuchida about the role of SRA-J in Japan. “Although our membership is still limited (about 600), we are planning to double it within a few years through strengthening our organizational structure and promoting our activities in various areas. We think that promotion of interdisciplinary research on the subjects, such as risk phenomena will be most necessary in Japan, which is highly developed in economy and technology, etc., while facing new types of problems to be solved by this type of approach. The method and principle of risk analysis is not that popular yet in Japan, however we must integrate our research effort and apply its fruits to solve existing and coming risk-related problems in our society to effectively meet their needs theoretically and also technologically as described above.”

“We strongly believe that we have to establish the new international systems to organize the societies for risk analysis all over the world,” Tsuchida added. “We hope that we will have fruitful discussion on this.”

SRA-Europe

The Society for Risk Analysis-Europe was founded in 1987, as described in Marc Poumadère's *From Risk Analysis in Europe to European Risk Analysis: The First Ten Years of SRA-E (1987-1997)*:

“In 1987 Pieter Jan Stallen (NL), then an SRA councillor, felt it would be appropriate to promote the goals of the Society among the 69 then current members living in Europe, and he made the ‘many first steps’ to a regional section and now full-fledged Chapter. One of these first steps was to create an Advisory Committee composed of senior scientists and functionaries in Europe from the areas of health, safety and the environment. At the end of 1987, Pieter Jan Stallen and other interested SRA members Hans Bohnenblust (CH) and Marc Poumadère (F) met with this committee. The project of formal creation of a Society for Risk Analysis in Europe was discussed and approved.

“An important step has been taken in the creation by SRA-E, with the cooperation of SRA-Japan, of the *Journal of Risk Research* [in 1997]. The aims of this refereed journal include the stimulation of intellectual debate on risk, addressing the growing concern about the role of risk in modern society, among researchers, academics, policy makers and members of industry, and serving the growing geographic and disciplinary diversity of the risk community.”

SRA-E presidents have included Pieter Jan Stallen, Tony Cox, Marc Poumadère, Detlef Muller, Ray Kemp, Ortwin Renn, Philippe Hubert, Britt-Marie Drott-Sjöberg, Jose Palma-Oliveira, Peter Wiedemann, Peter Allen, and Scira Menoni.

As stated in the history by Deisler and Schwing,* SRA-Europe has been active in organizing conferences on many risk topics, established its own system of awards, secretariat, and Web site, and established its own chapter, the UK Chapter.

SRA, SRA-Europe, and SRA-Japan held a World Congress on Risk in Belgium in June 2003 and plans are underway for the second World Congress on Risk to be held in 2008.

Australia Chapter

The Australia Chapter was officially approved at the December 2004 Annual Meeting in Palm Springs, California. Current President Nick Linacre and several other key people in government, industry, and academia were instrumental in forming the chapter. "The establishment of a chapter needs someone to champion the idea and network with interested parties, which typically include federal and state regulators, private industry and academic institutions, and defense," Linacre said. "The chapter was formed after an initial Australia-wide teleconference and several visits to the United States. Like the United States, Australia is a large country; however, the population is relatively small (21 million) and concentrated in geographically dispersed major capital cities. Unlike in the United States, it is difficult to achieve critical mass in any one city but typically there are four or five people in each city. Therefore most meetings and participation and interaction has occurred by teleconference."

There are approximately 20 members in the chapter, which is currently searching for a new president as Linacre is now based in the United States.

The role of the Australia Chapter is "primarily to provide a forum for risk-related issues, a network of like-minded people, and an opportunity for academics to develop talented students and provide them with avenues to cultivate their interests in risk analysis," according to Linacre. "Risk analysis in Australia affects many aspects of society. Identifying, quantifying, and mitigating risks are likely to be important innovations in future corporate governance in both the public and private sectors.

Chapitre Saint-Laurent

The Chapitre Saint-Laurent was created on 18 November 1996 by a group of environmental researchers and scientists led by Louise Houde, Sylvie Brucher, and Louis Martel. It became simultaneously part of the Society for Risk Analysis (SRA) and of the Society of Environmental Toxicology and Chemistry (SETAC). It was officially accepted as part of the SRA in May 1997.

"A series of meetings led to the decision of forming our own chapter in the province of Québec and to associate this chapter with both SRA and SETAC," said President Stéphane Masson. "The entire process took approximately one year and since its foundation, the Chapitre Saint-Laurent has had six presidents: Louise Houde (1997-1998), Louis Martel (1998-1999), Sylvain Loranger (1999-2001), Anne-Marie Lafortune (2001-2003), Christian Gagnon (2003-2005), and Stéphane Masson (2005-today)."

"Chapitre Saint-Laurent now has a membership of more than 150 (yearly, between 140 and 180) members including researchers, students, consultants, and managers from government, business, academia, and consulting services concerned about environmental toxicology and health and analyses," Masson explained. "Chapitre Saint-Laurent provides a welcome forum for multidisciplinary interchange. The objectives of Chapitre Saint-Laurent are to provide a forum for interchange and cooperation among its members, in their respective areas of expertise; identify development needs and foster scientific research in its fields of interest; promote training and education in its fields of interest;

and foster interaction among the various specialists in these fields in academia, business, government, and consulting services.

"The Québec government recently presented an ambitious Sustainable Development Plan for Québec that is supported by a Bill project," Masson added. "Another provincial Bill allows the use of risk analysis in the process of contaminated sites management. In that context, the role of risk analysis, both toxicological and ecological, in the province of Québec will gain in importance in the very near future."

UK Chapter

The UK Chapter was formed as a chapter of SRA-Europe by Ragnar Löfstedt, then Reader at the Centre for Environmental Strategy at the University of Surrey, in 1997. The chapter has had three meetings, of which two were held in London and one in Norwich. There are currently discussions to reactivate the chapter and this is now being directed by Dr. Ellen Townsend (University of Nottingham) in close collaboration with Professor Löfstedt. Future meetings of this chapter will be communicated via the RISK newsletter.

Kiev Chapter

The Kiev Chapter was approved by the SRA Council in 1992 with the help of Warner North and Naum Borodyanskiy, the chapter's current president. "The Kiev Chapter is alive and active with members in several Ukrainian cities," according to Paul Deisler and Dick Schwing's history.*

**History of the Society for Risk Analysis Through the Year 2000*, Paul F. Deisler, Jr., and Richard C. Schwing

SRA Welcomes New Chapters and Sections Around the World

The Society for Risk Analysis welcomes new members and new units around the world. Here are three ways the SRA is working to help:

- Information on how to form a new chapter or section. Visit the SRA Web site at http://www.sra.org/about_chapters_sections.php. This includes requirements for new units and the petition form to create a new unit. It also includes materials to take advantage of the SRA Speakers Bureau to invite an SRA officer to speak at a chapter event.
- Second World Congress. Before the Second World Congress on Risk, to be held in 2008, the SRA hopes to encourage and assist numerous local events around the world and to take account of the outputs of these local events at the World Congress. For more information contact the SRA Secretariat at SRA@BurkInc.com.
- Participate in the SRA Global Network Dialogue. Visit <http://www.sra.org/phpBB2> and join the discussion on how SRA can best support risk analysis in your area and worldwide.



News and Announcements

Upcoming Workshops, Courses, and Conferences

Probabilistic Risk Assessment (PRA): Bridging Components Along the Exposure-Dose-Response Continuum

“Probabilistic Risk Assessment (PRA): Bridging Components Along the Exposure-Dose-Response Continuum,” which will be held 25-27 July 2005 at the Omni Shoreham Hotel in Washington, DC, is a Society of Toxicology Contemporary Concepts in Toxicology Workshop and is cosponsored by the Society for Risk Analysis (SRA), the American Chemistry Council, the US Environmental Protection Agency, the US Food and Drug Administration, and the Food Safety Inspection Service of the US Department of Agriculture. The workshop will focus on four areas: exposure assessment, ecological risk assessment, human health risk assessment and medical decision analysis, and cost-benefit/multicriteria decision analysis applications.

The workshop’s purpose is to bring the state of the science in quantitative analysis and probabilistic risk assessment to bear on improving the characterization of relationships along the exposure-dose-response continuum. Practicality and application of PRA in the current regulatory risk assessment arena will be emphasized with special attention on modeling of uncertainty and variability. The principal objectives of the event are to develop the interdisciplinary dialogue necessary to stimulate research on crosscutting PRA applications and to identify barriers to or implementation issues with such applications and suggest approaches to overcome challenges that include limitations in data that typically result from current testing paradigms; organizational restrictions that break complex, multifaceted projects into separate and disconnected activities (for example, exposure versus dose-response) rather than properly interfacing and sharing information; variability of measurement scales; differences in valuation of various endpoints; simplifying approaches that lose information; the lack of formal statistical or systematic procedures; and inadequate communication strategies.

Further information is available at http://www.toxicology.org/memberservices/meetings/PRA_meeting.html.

International Conference on SPS Risk-Assessment Methods

Tuskegee University, the SRA, and the United States Department of Agriculture are sponsoring an International Conference on Sanitary and Phytosanitary (SPS) Risk-Assessment Methods 9-11 August 2005 at the Omni Shoreham Hotel in Washington, DC. The conference theme is “Optimizing the SPS Regulatory Toolbox.” The purpose of the conference is to review various SPS risk-assessment methods by regulatory agencies and build a better toolbox.

Invited speakers from several countries, international organizations, academia, private industry, and government will share their expertise. Agenda topics include the use of SPS risk assessment in decision making, resource constraints, role of international standards, data quality, international perspectives, and legal versus scientific standards for evidence in risk assessments. The conference will provide an opportunity for risk

analysts and regulators to exchange ideas and experiences with sanitary and phytosanitary risk assessment.

Register online at <http://compepid.tuskegee.edu/RiskConference/frontpage.htm>.

NATO Advanced Study Institute on Integrated Water Resources Management in the Middle East

The NATO (North Atlantic Treaty Organisation) Advanced Study Institute on Integrated Water Resources Management in the Middle East, which will be held 6-17 February 2006 at Arava Institute for Environmental Studies (located on Kibbutz Ketura) in Israel, is cosponsored by SRA and the Israel Palestine Center for Research and Information. The course will address water scarcity in the Middle East as both an environmental concern and a security concern. What makes water especially difficult to manage is that it is first an essential and irreplaceable resource for any organism’s survival and, second, that many watercourses are transboundary, adding a political element to its management. In the Middle East, in particular, these two elements have created an environmental crisis where sustainable management of the region’s water resources requires innovative and far-reaching solutions. The convergence of these issues highlights the link between natural resource scarcity and the potential for conflict.

Further information is available at www.natowater.org or contact the organizer, Clive Lipchin (972-8-635-6694, fax -6634, clive@arava.org).

TestSmart DNT Creating a Humane and Efficient Approach to Developmental Neurotoxicity Testing

“TestSmart DNT—Creating a Humane and Efficient Approach to Developmental Neurotoxicity Testing,” which will be held 13-15 March 2006 at the Hyatt Regency Reston in Reston, Virginia, will be cosponsored by SRA, the US Environmental Protection Agency, the National Institute of Environmental Health Science, Research Institute for Fragrance Materials, CEFIC Long Range Research Initiative, and Rohm and Haas. The symposium will address developmental neurotoxicity (DNT), which is a major issue in children’s health worldwide. Current methods for DNT testing are complex and expensive in terms of scientific resources, time, and animal use. Given the increasing number of chemicals that need to be tested and the increasing amount of information needed about them, we must look for new approaches to meet the demands for identifying developmentally neurotoxic agents with speed, reliability, and respect for animal welfare. TestSmart DNT is a long-term program aimed at identifying a battery of methods for DNT testing that meet government requirements, enhance decision making, improve risk assessment and management, and promote humane science. This meeting is the first of a series that will bring together leading stakeholders from around the world to develop the DNT testing methods of the future.

Further information is available at <http://caat.jhsph.edu/dnt> or from the organizer, Alan Goldberg (410-223-1692, fax -1603, goldberg@jhsph.edu or caat@jhsph.edu).

Environmental Multicriteria Decision Analysis (e-MCDA) for Analytic-Deliberative Decision Making

Environmental problems inevitably involve shared resources, multiple perspectives, and group decision-making processes. To reach credible, legitimate decisions, both analytic and deliberative processes are called for. However, there is little guidance about how to structure analytic-deliberative decision-making processes that foster trust and understanding between parties with different views and remain grounded in a scientific understanding of the consequences of each alternative. The expertise required is resident in a number of scientific disciplines that rarely have the opportunity to participate in a trans-disciplinary dialogue. Environmental multicriteria decision analysis (e-MCDA) represents a promising tool to facilitate better decisions. This workshop proposal is motivated by the hypothesis that e-MCDA can provide a single framework for integrating multiple analytical techniques such as risk analysis, benefit-cost analysis, and life-cycle assessment, with deliberative strategies such as expert workshops, stakeholder negotiation, and citizen advisory committees toward the goal of identifying conflicts or opportunities for compromise between different stakeholder groups. The event will be held in Washington, DC, this winter or next spring. Sponsorship opportunities are available!

For more information please contact Igor Linkov (Linkov@CambridgeEnvironmental.com) or Tom Seager (tseager@purdue.edu).

Strategies for Risk Communication: Evolution, Evidence, and Experience

“Strategies for Risk Communication: Evolution, Evidence, and Experience” will be held in the New York City area this winter or next spring. This symposium will bring together theorists and practitioners in risk communication, risk perception, and brain research to address the design of communication strategies that are informed by recent empirical advances in neurophysiology and brain imaging, anthropology and human evolutionary biology, and traditional survey protocols of risk perceptions and attitudes. The questions to be addressed include what kinds of information about risks can humans readily process, what kinds are likely to be misunderstood, what features a risk-communication effort should have to improve its likelihood of success, and whether risk analyses underestimate risks if they do not account for perception issues.

Further information is available at www.ramas.com/riskcomm.htm or from the organizer, Troy Tucker (631-751-4350, fax -3435, troy@ramas.com).

Risk Management Tools for Environmental Security, Critical Infrastructure, and Sustainability

The North Atlantic Treaty Organisation (NATO) Advanced Research Workshop (ARW) “Risk Management Tools for Environmental Security, Critical Infrastructure, and Sustainability” is scheduled for Spring 2006 in Venice, Italy. This ARW will

focus on the development of a “risk management toolbox” that can be used by risk managers and their staff to develop risk-management decision documents that are systematic, transparent, and rigorous to match that of the risk assessment on which they are based. Meeting participants will discuss their organization’s and country’s risk-analysis and risk-management tools and will participate in workgroups whose goals include a framework for the inclusion of the international risk-management tools presented at the conference. For more information, please contact Dr. D. Belluck, United States Department of Transportation, Washington, DC, United States (email: David.Belluck@fhwa.dot.gov) or Dr. Abou Ramadan, Atomic Energy Authority, Cairo, Egypt (email: ramadan58@yahoo.com). A Web site is currently under development.

The Second MASSIG Workshop and Doctoral Seminar—Researching Risk: Public Policy and Social Dimensions

The 2006 MASSIG Workshop and Doctoral Seminar, “Researching Risk: Public Policy and Social Dimensions,” follows the very successful 2004 Risk Workshop at the University of Utah. The 2004 workshop attracted more than 40 doctoral students and faculty and provided a forum for discussion and identification of opportunities for joint research. The 2006 workshop will be led by distinguished researchers presenting their research. Faculty participants will be announced as plans are finalized. Participants will have the opportunity to interact with scholars as well as a number of other researchers active in the areas of risk and public policy. Basic processes of risk perception and risky behavior as well as multiple approaches to researching and understanding these processes and behaviors will be discussed. Participants will develop a mini research proposal with the feedback/guidance of presenters and resident faculty scholars. Extensive preworkshop readings, as well as development of a statement of research interests, will prepare attendees to be active participants.

The workshop is designed for advanced PhD students and new faculty members who have an interest in developing a research stream in public policy/risk domain. Doctoral students may enroll in the seminar for three hours of graduate course credit from the University of Southern California’s (USC) Marshall School of Business (USC’s credit hour tuition will apply) or independent study through their home universities. Other participants are welcome for the professional-development experience.

The workshop is sponsored in part by the Marketing and Society Special Interest Group. A limited number of scholarships will be available to help cover housing and registration fees and a limited number of travel grants may also be available.

For more information, contact one of the following faculty members: Ingrid M. Martin (imartin@csulb.edu), David W. Stewart (David.Stewart@Marshall.USC.EDU), or Michael Kamins (mkamins@Marshall.USC.EDU).

Please go to the SRA Web site (www.sra.org) to check out the Members Only page, vote, and make your voice heard on the member survey!

Reports on Previous Workshops

Probabilistic Risk Assessment: Current Developments and Applications for Environmental Assessment and Management

Richard Lester and Igor Linkov

Whether and to what extent contaminated properties harm ecologic and human health are topics of considerable interest, but also considerable uncertainty. To report and reduce the uncertainties inherent in assessing ecologic and health risks, analysts have increasingly come to rely on methods collectively termed probabilistic risk assessment (PRA). Several federal and state agencies have approved the use of some or many aspects of PRA, but its site-specific application has often been limited to high-profile sites and large projects. Nonetheless, times are changing: newly developed software tools, and recent federal and state guidance documents formalizing PRA procedures, now make PRA a readily available method of analysis for even small-scale projects.

The workshop "Probabilistic Risk Assessment: Current Developments and Applications for Environmental Assessment and Management" took place at Michigan State University on 28-31 March 2005 and attracted more than 50 scientists from academia, government, and industry. The workshop was the first educational event organized jointly by the Society for Risk Analysis (SRA) and the Interstate Technology Regulatory Council (ITRC), a state-led coalition working together with industry and stakeholders to achieve regulatory acceptance of environmental technologies. The objective of the workshop was to train state and government personnel and other professionals in the methods and tools available for use in site- and project-specific risk assessments.

The first half of the workshop introduced PRA, examined its regulatory basis and use in health and ecological risk assessment, and discussed ways of communicating the results of a PRA. The second half of the workshop consisted of hands-on training during which participants were given laptop computers and instructed in the use of Crystal Ball, a frequently used software tool for performing PRA.

In the introductory session, Scott Ferson of Applied Biomathematics emphasized the usefulness of PRA in performing uncertainty analysis and illustrated the use of probability bounds and 2D Monte-Carlo analyses. Igor Linkov followed with a discussion of deterministic and probabilistic risk assessment techniques in two case studies. The presentation noted that while PRA can be expensive and computationally intensive, the advantages are better characterization of the site, more complete evaluation of uncertainty, better consideration of spatial and temporal variability, and frequently less expensive remedial solutions. Ted Simon, of the US Environmental Protection Agency (EPA) Region 4 and a coauthor of EPA's Risk Assessment Guidance for Superfund (RAGS) Volume 3 on PRA, briefly discussed the RAGS guidance and summarized its use at a number of sites.

Several presentations focused on PRA application to human health. Annie M. Jarabek, an EPA Visiting Scientist at the CIIT¹ Centers for Health Research, focused on dose-response assessment and gave multiple examples using a Bayesian statistical approach to characterize the toxicity of chemicals. Bill Wright of Montgomery Watson discussed probabilistic toxicity as-

essment and the development of a subacute oral reference dose for selenium, concluding that a sensibly derived probabilistic distribution of values for such a variable offers far more information than a point estimate. Edmund Crouch of Cambridge Environmental presented an analysis of available bioassay data for PCBs (polychlorinated biphenyls), deriving variability and uncertainty distributions for a PCB cancer potency. Ewen Todd, the Director of the National Food Safety and Toxicology Center, discussed policy changes as the result of risk assessments of microbial pathogens in food.

The ecological risk assessment portion of the workshop began with John W. Kern, of Kern Statistical Services, Inc., discussing spatially explicit exposure assessment for ecological receptors and the use of probabilistic tools for spatially explicit ecological risk assessments. Jeffery A. Steevens, of the US Army Corps of Engineers, considered "The Use of Probability in Assessing Contaminated Sediments," examining New York Harbor as a case study. Bill Wright then expanded upon his earlier evaluation of selenium and discussed ecological risks posed by selenium leaching from rock at phosphate mines in Idaho. He emphasized the importance of selecting the appropriate assessment endpoint at the population, community, or landscape levels.

W. Lee Poe tied many of the points together with his talk, "Communicating Probabilistic Risk Assessment to Stakeholders." While PRA may seem more complicated than deterministic risk assessment, with proper communication of results to stakeholders in the process, PRA can provide a better basis for decisions than deterministic risk assessment. The 1½-day conference portion of the workshop concluded with a series of short presentations by workshop participants discussing PRA as it is applied at various sites across the country.

Philip Goodrum of Syracuse Research Corporation and Ted Simon of EPA Region 4 presented a 1½-day short course on probabilistic risk assessment. The short course alternated short PowerPoint presentations on aspects of PRA with hands-on examples using Crystal Ball 7 software.

Possible follow-up activities to the workshop include preparation of a summary paper characterizing the state of PRA applications in the United States and a future workshop on multicriteria decision analysis (MCDA). Frequently, the purpose in performing a PRA is to assist in selecting remedial alternatives. Deciding between remedial alternatives is seldom straightforward. Factors that go into the decision-making process include human health risks, environmental risks, community disruption, costs, and government regulations. MCDA aids the decision-making process and communicates the many factors that go into the decision to stakeholders. MCDA encourages consideration of all factors in the decision-making process, resulting in a less biased outcome and promoting open dialogue between stakeholders and the public.

¹ CIIT was historically the Chemical Industry Institute of Toxicology.

Combining Risk Assessment with Multi-Criteria Decision Analysis for Environmental Security in Coastal Areas

Greg Kiker, Rick Wenning, Todd Bridges, Barry Payne, Charles Yoe, Kyle Satterstrom, Boris Yatsalo, Abou Ramadan, and Igor Linkov

Environmental security is increasingly viewed as a critical issue by governments and international organizations. Urban development and growth requirements are raising environmental concerns and challenging current environmental protection and management strategies. Dimensions of environmental security as well as tools for risk and vulnerability assessment and management were discussed at the NATO (North Atlantic Treaty Organisation) Advanced Workshop titled “Environmental Security in Harbors and Coastal Areas: Management Using Comparative Risk Assessment and Multi-Criteria Decision Analysis” which was held in Thessaloniki, Greece, 20-24 April 2005. Coastal areas attract large numbers of people and are subject to increased industrial activities and overpopulation. These areas must carefully balance anthropogenic needs such as navigation and industrial development with ecological factors such as restoration or invasive species.

During the workshop, a team of 50 risk assessors, decision makers, environmental modelers, and engineering experts from 20 countries explored the tools and approaches available for addressing environmental security issues in ports, harbors, and coastal areas. State-of-the-science reviews and applications were discussed during the plenary sessions, while three working groups discussed methods and applications specific to the following functional/application areas: (1) environmental security, (2) sediment management, and (3) restoration and invasive species.

The environmental security working group discussed approaches for evaluating natural and man-made environmental vulnerabilities at chemical manufacturing plants, energy plants, transportation networks, and other critical infrastructures located in urban and coastal areas. Maintaining or enhancing environmental security requires consideration of three elements: (1) understanding basic human, ecological, and environmental conditions, (2) predicting various opportunities whereby security might be compromised, and (3) analyzing the range of options to enhance, prevent, or minimize the opportunity for such events to occur. Each element requires consideration from different stakeholder perspectives and entails a broad range of quantitative and qualitative sociopolitical, environmental, and economic information. The convergence of these seemingly disparate sources of information is possible using one or more available decision-making tools, although the strengths and limitations of different approaches must be recognized.

The overall goal of the sediment working group was to provide a resource for contaminated sediment managers by discussing available management tools and common problems. The discussions focused on four aspects of sediment management: management contexts and criteria, management processes and outcomes, people engagement, and information/knowledge. First, management contexts and criteria involve setting up the decision framework. Problem identification is an important and often overlooked initial step, as is careful determination of the proper criteria to use when evaluating possible management alternatives. Second, management processes and outcomes include efficient planning and planning support tools, consideration of available remedial options, review of relevant technical tools, and lessons learned. The group discussed each step in terms of time, predictability, and

scale. Third, people engagement is an important aspect of sediment management—the group concluded that a successful project is one that embraces the stakeholders, culture, and decision makers involved in the management situation. Finally, information enables the other steps—it is created by people and the management process, and the group agreed that ideally everyone should be able to use it for community benefit.

The restoration and invasive species working group defined coastal restoration as management of biological, chemical, and physical hazards and resources in the coastal zone to produce a desired, safe environment in accordance with nature. Important considerations for establishing objectives of restoration include consideration of feasibility, sustainability, damaging trends, minimizing environmental degradation and hazards, and aesthetics. The need for specific performance or success criteria that are realistic, relevant, and object oriented was identified and related to identification of appropriate indicators and metrics for evaluating restoration efforts. Timing, spatial scale, and methods (remote sensing, models, in-situ monitoring) were discussed in relation to physical, biological, land use and human activities, and economic characteristics that determine the success of restoration. Special emphasis was placed on the need to recognize how broad-level uncertainties (for example, global warming, catastrophes, population change) affect coastal restoration. Frameworks (for example, risk analysis, scenario planning, collaborative learning, and adaptive management) and tools (for example, fuzzy set theory, probabilistic scenarios, multi-criteria decision analysis, and comparative risk assessment) were discussed in relation to both coastal zone restoration and invasive species management.

The conference presentations and subsequent working groups showed that future demands on professionals will highlight the integrative and adaptive nature of decision making within coastal areas. The workshop participants concur that during the 21st century challenges in balancing human and ecological needs are likely to increase, and they may lead to significant conflicts if functional approaches to addressing such problems are not recognized and discussed. In response to these challenges, integrative decision-making policies and plans should be launched jointly in the framework of cooperative strategies and conflict avoidance. Addressing the environmental threats and their resulting mitigation actions necessitates not only an understanding of the basic risk-assessment paradigm and a familiarity with its tools, but also a modification of the risk paradigm to incorporate the unique political and ecological challenges of different countries and their level of development. Given the significant challenges for coastal areas, structured and defensible decision-making tools are going to be increasingly required in environmental management decisions. Multi-criteria decision analysis in combination with risk assessment has the systematic foundation to build useful tools for integrating scientific analysis with stakeholder values.

The meeting was an event supported under the NATO Program for Security Through Science. Additional support was provided by the US Army Corps of Engineers and the Society for Risk Analysis.





Specialty Groups

Dose Response Specialty Group

www.sra.org/drsg

Ralph L. Kodell, Chair

The Dose Response Specialty Group's (DRSG) second teleseminar of 2005 was presented 7 June 2005 by Dale Hattis of Clark University. His title was "Age-Related Differences in Susceptibility to Carcinogenesis—Human Risk Inferences from an Analysis of Animal Bioassay Data." Dale provided his slides in advance for posting on the DRSG Web site. Widespread interest among DRSG members was evident, as approximately two dozen callers participated. DRSG Chair-elect Justin Teeguarden introduced Dale and moderated the question-and-answer period that followed the excellent presentation.

For next December's 2005 SRA Annual Meeting in Orlando, the DRSG has endorsed the following symposia: (1) Acute health effect assessments and issues (organizer: Gary Foureman), (2) Sources of variation in toxicological studies and their effects on precision of results (organizer: Paul Feder), (3) Use of mode of action in EPA's 2005 cancer guidelines (organizer: Resha Putzrath), and (4) Acrylamide in food: The roles of laboratory rodents, the press, and warning labels in risk analysis (organizer: Sara Henry). The DRSG Mixer at Orlando will again feature the presentation of the group's Student Award.

DRSG Past Chair Gary Foureman led an effort to change the titles of DRSG officers from President, Vice-President, etc., to Chair, Vice-Chair, etc., to make the group consistent with other SRA specialty groups. An official vote to change the by-laws in this regard passed unanimously and the result has been forwarded to the SRA Council for ratification.

You are invited to join the DRSG's monthly teleconferences on the first Tuesday of each month, 12:00 noon to 1:00 p.m. Eastern Time. The call-in number is 513-569-7897, and the access code is 2790# (help desk 513-569-7754). In March, June, and September, our teleconferences are devoted to teleseminars on timely dose-response topics. The other monthly teleconferences are devoted to conducting business of the DRSG, including planning activities for the SRA annual meeting. Please visit our Web site (<http://www.sra.org/drsg/>) for general information on DRSG activities.

Risk Communication Specialty Group

www.sra.org/rcsg

Cliff Scherer, Chair

Paper submissions to Risk Perception and Communication are once again the highest of all specialty groups with 55 papers proposed. Bob O'Connor, Kara Morgan, and Cliff Scherer met with the SRA program committee in the DC area on 22 June 2005 to help finalize the program for the annual meeting in December. At the December meeting there will be six risk communication paper sessions, one risk communication poster platform session, and several symposia related to risk communication and perception topics, plus 14 posters on risk communication. Six oral paper sessions have been organized on Perceptions of Health Issues, Understanding Trust, Perceptions of Technology Risks, Communicating Uncertainty, Media and Internet as Sources of Information, and Factors Influencing Risk Perception. In addition, a number of symposia have been scheduled, many including papers on risk communication and perception.

Examples include Organizational Contexts of Risk Communication, organized by Brandon Johnson; Risk Analysis and Nanotechnology, chaired by Kara Morgan; and, The Past, Present and Future of Risk Communication, organized by Cliff Scherer. Hope to see you all in December!

Ecological Risk Assessment Specialty Group

www.neptuneandco.com/sra-erasg

*Randy Ryti, Chair; Todd Bridges, Chair-elect;
and Igor Linkov, Past Chair*

The Ecological Risk Assessment Specialty Group (ERASG) has been active in soliciting and reviewing presentations for the 2005 Annual Meeting in Orlando, Florida. Although the Program Committee has not yet selected the final list of papers to be included in the annual meeting, some interesting themes have emerged from the submissions. One such theme is the importance of biological stressors in ecosystems; papers have been proposed on invasive species and pathogens. We have also solicited papers of importance to Florida ecosystems, and submissions to these sessions include topics like Everglades management and research in endocrine disruptors. The meeting also promises to have an international flair, as papers in the ecological risk assessment category include submissions from three continents. Thus, the meeting promises to have some new content and faces; we hope that this preliminary glimpse at the technical program encourages you to make plans to attend the SRA annual meeting in Orlando.

For those who do come to Orlando, please plan to attend our Ecological Risk Assessment Specialty Group business meeting and mixer. It is a good way to meet your colleagues and find ways to contribute to the SRA. Please check the program for details.

If you have a contribution relevant to the ERASG column in the SRA quarterly newsletter or have some information that you would like to post on the ERASG Web site please send this information to Randy Ryti (rtyti1@neptuneinc.org).

Decision Analysis and Risk Specialty Group

Igor Linkov, President, and Greg Kiker, Secretary-Treasurer

At its June 2005 meeting, the SRA Council approved formation of the Decision Analysis and Risk Specialty Group (DARSG). Similar to other SRA specialty groups, this group will provide leadership and play an active role in advancing the use of decision analysis and risk assessment tools in policy and practice and will also facilitate knowledge development and idea exchange. The interdisciplinary nature of this specialty group implies close ties and joint activities with other specialty groups, especially with Economics, Ecological Risk Assessment, and Risk Communication. According to the by-laws, the group will be led by the president and the secretary-treasurer with support of the past president and the president-elect. Igor Linkov (Cambridge Environmental) and Gregory Kiker (University of Florida) will serve as officers until the first election is held.

The annual meeting in Orlando will feature several DARSG-sponsored activities. It will include a continuing education workshop on "Integrated Risk Communication and Decision Analysis: Process, Methods and Tools," Symposia on "Multi-Criteria Decision Analysis, Risk Assessment and Homeland Security Applications" and on "Environmental Security in Harbors and Coastal

Areas: Management using Comparative Risk Assessment and Multi-Criteria Decision Analysis” as well as several topical sessions. We plan to offer the Best Student Paper award. This award was not announced in the SRA Call for Papers. Please contact us as soon as possible if you would like to apply. Finally, we plan to have a DARSG business meeting and reception.

We would like to solicit your ideas on the activities and topics you would like us to address. While we are developing a Web site, you can register and submit your ideas through the Web at www.risktrace.com/darsg. We would also appreciate your ideas on the group logo. Please feel free to contact Igor (Linkov@CambridgeEnvironmental.com) or Greg (gkiker@ufl.edu).



SRA-Europe

SRA-E Annual Meeting Arouses Great Interest

Markus A. Grutsch, Information Officer

The 14th Annual Meeting of the Society for Risk Analysis-Europe (SRA-E) will be held 12-14 September 2005 at the Politecnico di Milano-Polo in Como (Italy). The conference will be organized and hosted by Scira Minoni, the president of SRA-E. The title of the conference is “Major Risks Challenging Publics, Scientists and Governments.” The conference will take a comprehensive view of risk and will address a wide range of topics, including the legislation, regulations, and juridical aspects of risk management as well as economic aspects of damage prevention. Other foci will be placed on creating a risk culture, risk communication, risk in complex environments, and disaster and public health. For a detailed description of the conference’s topics and the workshop topics go to the SRA-E Web site (<http://www.sraeurope.org>).

Scientists and practitioners from different fields and disciplines have sent in their contributions. Presently, more than 170 abstracts are registered which reflects the great interest in the conference. The authors have been notified about the acceptance of their contributions. For those who wish to submit a full article are encouraged to do so by 14 September 2005. Oral presentations are scheduled in five parallel sessions across the six guiding topics. Workshops, working group meetings, and poster sessions will be dedicated enough time in the conference program. The program is now available on the SRA-E Web site.

All planning activities are in process and the conference management board is looking forward to welcoming all participants at the conference. Further information about the conference program, registration/fees, traveling/directions, accommodations, hotel booking, etc. can be found on the SRA-E Web site (www.sraeurope.org). Any questions regarding the conference can be sent by email to the SRA-E Conference Secretariat, Ms. Raffaella Cozza (cozza@stru.polimi.it).

SRA-E Executive Committee: Scira Menoni (President), Olivier Salvi (President-elect), Peter T. Allen (Past President), Andrea T. Thalmann (Secretary), Roberto Bubbico (Treasurer), Marianne Abramovici (Chair Nominations), Julie Barnett, Walter R. Stahel, Jan M. Gutteling (Co-opted Member, US Liaison Officer), and Markus A. Grutsch (Co-opted member and information officer).

Conference Secretariat: SRA-E Secretariat Raffaella Cozza; Dipartimento di Ingegneria Strutturale Politecnico di Milano - Piazza Leonardo da Vinci 32 - 20133 Milano, Italy; fax: +39-0223994300; email: cozza@stru.polimi.it.



SRA-Japan

English Version of SRA-Japan Web Site

Jun Sekizawa, President

We are very glad to announce that we opened a new English version of the Society for Risk Analysis-Japan Web site at <http://dss.sys.eng.shizuoka.ac.jp/sra-japan/english/index.html>. We have three Web pages for introduction: About Us, Events, and Journal, respectively.

Regarding events, people can see news on our General Assembly, the SRA Japan 2005 Spring Symposium on 24 June 2005 at Sanjo Conference Hall of the University of Tokyo, and the 2005 Annual Meeting of the SRA-Japan, which will be held 12-14 November at the Convention Center of Osaka University and the Nakanoshima Center of Osaka University (http://rio.env.eng.osaka-u.ac.jp/risk/risk2005/english/index_eng.htm).

On the annual meeting page, people can also find a registration form, together with a paper format for submission of the abstract in English, a conference brochure, and the accommodation information, etc. in English. We cordially welcome participation from overseas in our 2005 Annual Meeting.



Committees

Chapters and Sections Committee

Rachel Davidson, Chair

Reminder to all chapters to consider taking advantage of the SRA Speakers Bureau—the Speakers Bureau makes available a modest fund to assist local SRA chapters with the travel and lodging expenses of bringing a current or former SRA official to speak at a local chapter meeting. This travel funding provides an excellent opportunity for the chapters to have internationally recognized risk experts participate in their local meetings. See the SRA Web site for a list of speakers and directions on how to participate, or contact Chapters and Sections Committee Chair Rachel Davidson (rad24@cornell.edu) for more information.

Education Committee

David Hassenzahl, Chair

The Education Committee continues to collect and share risk educational materials. Please send your syllabi or links to your courses and programs to david.hassenzahl@ccmail.nevada.edu and visit the Web site www.unlv.edu/faculty/dmh/ratl.

We would like to schedule a meeting during the SRA 2005 Annual Meeting in Orlando. If you are interested in joining a discussion about the status and future of risk education, or otherwise participating in the committee, please let us know.

For information on the 2005 Society for Risk Analysis Annual Meeting and other information about SRA, check the Society Web site at www.sra.org.




Chapter News

Chicago Regional Chapter www.sra.org/chicago

Heidi Hartmann, Interim President

In April, Dr. Barbara Karn of the Environmental Protection Agency's (EPA) Office of Research and Development presented "Nanotechnology and the Environment: What is it? What's it got to do with Region 5?" This was an overview of nanotechnology with a focus on potential environmental implications. Nanotechnology is the science of creating and using structures, devices, and systems that have novel properties and functions because of their small sizes (molecular or macromolecular levels) and is one of the top research priorities of the US government. Nano properties can lead to useful applications in environmental protection

(for example, sensors for improved monitoring capabilities, treatment, and remediation techniques) but might also pose risks to human health and other organisms due to their composition, reactivity, and unique size. Karn addressed the current state of nanomaterials in industry, the positive applications of nanotechnology, and interactions of nanomaterials and possible risks. She addressed how the regions can be proactive in promoting green manufacturing and pollution prevention related to nanomaterials and nanotechnologies.

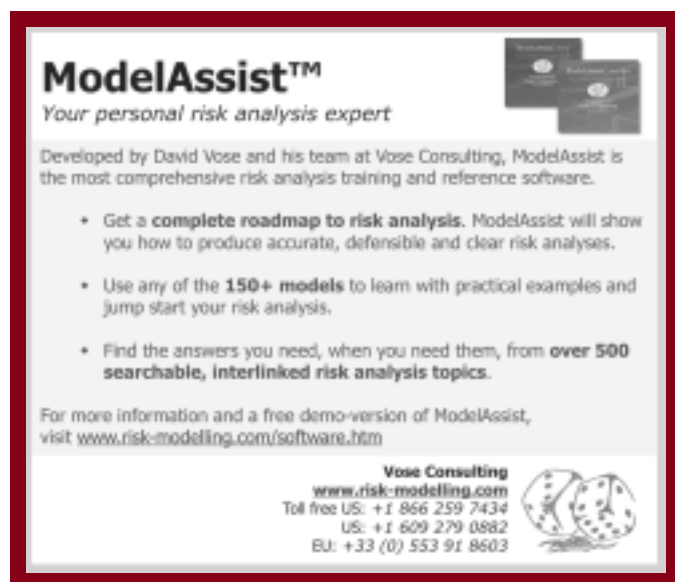
The Chicago Regional SRA Chapter held a dinner and elections meeting at the end of June and is planning to hold a half-day seminar focusing on children's health risk issues in the first half of October. See our Web site (<http://www.sra.org/chicago>) for updated information. 



Advertisements

University of Maryland Faculty Position (Position #105898)

Applications are sought for a tenure-track faculty position at Assistant or Associate Professor level in the area of risk-based design. Must hold a doctorate in engineering. Duties generally include developing externally funded research programs and teaching/developing courses. Submit a resume, research/teaching statement, list of four references, and copy of three publications to Risk-Based Design Search Committee Chair, Mechanical Engineering, University of Maryland, College Park, MD 20742. Should be available to start in August 2006 and should apply by 15 November 2005 but the position will remain open until filled. EEO/AA employer. Women and minorities are encouraged to apply. Please see department Web site at <http://www.enme.umd.edu/department/employment.html>.



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Scientist Position

ChemRisk is a consulting firm providing state-of-the-art toxicology, industrial hygiene, epidemiology, and risk assessment services to organizations that confront public health, occupational health, and environmental challenges. ChemRisk is seeking applicants with training in toxicology, pharmacology, the environmental sciences, risk assessment, biomedical engineering, industrial hygiene, medicine, or health physics.

This position requires a bachelor's degree in environmental or toxicological sciences. Candidates with a PhD or master's degree are preferred. Candidates with a background in consulting are especially desired. Positions are available in the offices in San Francisco, California; Boulder, Colorado; Houston, Texas; and Pittsburgh, Pennsylvania.

Please send résumés to ChemRisk, 25 Jessie Street, Suite 1800, San Francisco, CA 94105, or email: hr@chemrisk.com, phone: 415-896-2400, fax: 415-896-2444, www.chemrisk.com.

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 (greyscale) 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 30 December for the First Quarter issue (published early February), 30 March for the Second Quarter issue (early May), 30 June for the Third Quarter issue (early August), and 30 September for the Fourth Quarter issue (early 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.



RISK *newsletter* is published by the Society for Risk Analysis

Genevieve S. Roessler, *Editor*, gnrsslr@frontiernet.net
 Mary A. Walchuk, *Managing Editor*, mwalchuk@hickorytech.net
 Sharon R. Hebl, *Editorial Associate*
 Gail Charnley, *Associate Editor*, charnley@healthriskstrategies.com

Society Officers:

Baruch Fischhoff, *President*, baruch@cmu.edu
 H. Christopher Frey, *President-elect*, frey@eos.ncsu.edu
 Michael Dourson, *Secretary*, dourson@tera.org
 Pamela R.D. Williams, *Treasurer*, pwilliams@chemrisk.com
 Leslie J. Hushka, *Past Treasurer*, leslie.j.hushka@exxonmobil.com
 Caron Chess, *Past President*, Chess_C@aesop.Rutgers.edu

Members of SRA Council:

Richard A. Becker, rick_becker@americanchemistry.com
 Rachel A. Davidson, rad24@cornell.edu
 Adam M. Finkel, afinkel@princeton.edu
 George M. Gray, ggray@hsph.harvard.edu
 Jan M. Gutteling, j.m.gutteling@utwente.nl
 Pertti "Bert" J. Hakkinen, Pertti.hakkinen@jrc.it
 Lorenz Rhomberg, LRhomberg@GradientCorp.com
 Kimberly Thompson, KimT@hsph.harvard.edu
 Wendy Wagner, wwagner@mail.law.utexas.edu

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; email: SRA@BurkInc.com

Publications Chair: Caron Chess, phone: 732-932-9153, fax: 732-932-6667, email: Chess_C@aesop.Rutgers.edu

Newsletter Contributions: 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

Address Changes: Send to SRA@BurkInc.com

Deadline for RISK *newsletter* Submissions

Information to be included in the **Fourth Quarter 2005 SRA RISK *newsletter***, to be mailed early 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 **20 September**.



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 socio-economic 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 bylaws 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
1313 Dolley Madison Blvd., Suite 402
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